TECHNOPHANY
A Journal for Philosophy and Technology

The Digital Machine on Psychedelics

Mathis Guerreiro, New Media and Digital Culture ResMA student
guerreiromathis@gmail.com

Abstract:

Psychedelic experience and technology seem at first to belong to different realities. The former evokes a change of phenomenal perception that tends towards a return to nature while the latter seems to drive humanity away from it. This paper attempts to show that these two notions are in fact close. Through a comparative analysis using the concepts of recursivity and memory, this paper bridges the notions of psychedelic experience and technology to suggest an updated conception of the digital machine in becoming.

Keywords:

Psychedelics, Technology, Recursivity, Memory, Information, Simondon

Biography:

Mathis Guerreiro is part of the 2023 class of the Media Studies Research Master's at the University of Amsterdam. While completing a Bachelor's program in Management, Politics and International Relations at Lancaster University, he identified the relationship between life and technology as his main area of interest. His Bachelor's dissertation analysed the production of subjectivity within multiplayer and competitive online games and was accepted with a first-class honour. Before joining the University of Amsterdam, he was part of the Philosophy of Science and Logic Master's program at Paris 1 – Panthéon Sorbonne.

1. Introduction

The end of the 1930s saw the emergence of two major techno-scientific breakthroughs of radically opposed symbolic value. The first patent for the atomic bomb, symbol of death and the destruction of worlds[1], and the synthetising of LSD-25 by Arthur Stoll and Albert Hofmann in Bale, Switzerland. LSD is a psychoactive molecule that triggers psychedelic experiences to subjects who assimilate it. The term *psychedelic* was coined by novelist Aldous Huxley and psychiatrist Humphry Osmond[2] based on the Greek *psyche* and *delos* to express the mind/soul manifesting effect of such a drug-induced experience. Subjects who have experienced such a drug-induced phenomenon have reported feeling a unique connection with their environment and with other life forms. A connection that their past sober self could not recognise and that they could remember after the event, once "the gateway had been opened"[3]. A sentence stated by Hofmann himself on his 100th birthday in 2006 gives us an idea of the effect of LSD on the mind together with its opposition with the destructive aspect of modern techno-scientific development:

> "The feeling of co-creatureliness with all things alive should enter our consciousness more fully and counterbalance the materialistic and nonsensical technological development in order to enable us to return to the roses, to the flowers, to nature, where we belong."[4]

[1] J. Robert Oppenheimer was an American physicist who supervised the Manhattan Project, a research and development military unit that developed the first nuclear weapons during World War II. He is famous for having associated the detonation of an atomic bomb with a line from the Bhagavad-Gita: "Now I am become Death, the destroyer of worlds".
[2] Robert Dickins, "Power and the Sublime in Aldous Huxley's Drug Aesthetics," in Philosophy and Psychedelics: Frameworks for Exceptional Experience (S.l.: BLOOMSBURY ACADEMIC, 2023).
[3] Nicolas Langlitz, *Neuropsychedelia: The Revival of Hallucinogen Research since the Decade of the Brain* (Berkeley: University of California Press, 2012).
[4] Langlitz, 26.

It seems to be implied that psychedelic thinking appears like a remedy against the dangers of the Anthropocene, an epoch characterised by the change brought about by the evolution of humans and technology on geology and natural ecosystems. He therefore calls for a return to nature, supposed opposite to technology and its "nonsensical development". He even refuses the techno-scientific paternity of his discovery by affirming that "it must have been divine providence, not scientific method"[5]. Two very distinct worlds seem to be drawn: the world of nature that psychedelics allow to return to and the oppressing and catastrophic world of techno-rationality that it seemed impossible to escape until we found the "doors of perception"[6].

There has been a long lasting and widespread sentiment that our future escaped our grasp, due to the development of globalised capitalism and the associated development of technology that appears as uncontrollable, unwanted and unescapable[7,8]. Technology in its various forms is often pointed out as the scapegoat for the evils of our time, being synonymous with a loss of agency both at the individual and societal level. Borders seem to have changed their nature, becoming less clear to identify and leaving people with a sentiment of mere operators of a huge and inoperable machine that they have lost touch with.

This sentiment has taken a whole new level with the advent of digital technology. Indeed, this new technological turn has rendered the potential for surveillance, for behaviour influence, and for the extraction of value out of the smallest inch of people's attention even more significant. Digital technology is the closest to our bodies and minds. Perfectly embodied by the

[5] Langlitz, 25.
[6] Langlitz, 25.
[7] Mark Fisher, *Capitalist Realism: Is There No Alternative?* (Hants, UK: Zero Books, 2009).
[8] Lina Dencik, "Surveillance Realism and the Politics of Imagination: Is There No Alternative?," Krisis, 2018, https://archive.krisis.eu/surveillance-realism-and-the-politics-of-imagination-is-there-no-alternative/.

smartphone, it knows, analyses and even anticipates our most intimate traits that sometimes even escape our own consciousness.

In this paper, I will attempt showing that this representation of the technological condition thus described may change, that it is *optional.* This article takes the relationship between humans and their technology as a primary focus. Its aim is to attempt sketching a conception of technology that carries a possibility for becoming, through psychedelic thinking. Indeed, I will show that it is possible to bridge those two "worlds" with the notions of recursivity and memory that apply to both. In fact, they enable to understand technology and the psychedelic experience in their own way.

Psychedelics will be both taken as a method of investigation and as a comparative notion to technology. I am not implying here that technology and psychedelics are comparable in nature. Instead, I would like to analyse both in comparison with each other by drawing a parallel that will prove productive of a refined understanding of both concepts.

This article calls upon psychedelic thinking in order to go beyond the current widespread state and representation of technology and, in particular, of modern digital technology. Psychedelic thinking may be defined following Chris Letheby's interpretation[9] of *phenomenal opacity*. According to him, a psychedelic experience increases the opacity of representations, understood as an umbrella term for perceptions, imaginings, thoughts, beliefs, desires, emotions, and the underlying processes constructing them[10]. This increase of opacity allows our attention to "stop" at these representations and thus perceive them as such, and therefore

[9] Chris Letheby, *Philosophy of Psychedelics* (Oxford: Oxford University Press, 2021).
[10] Aidan Lyon and Anya Farennikova, "Stepping through the Psychedelic Looking-Glass," *Philosophy and the Mind Sciences* 3 (2022), https://doi.org/10.33735/phimisci.2022.9323.

considering them as *optional*. This method will allow us to perceive digital technologies not as they present themselves to us, but with more depth to enable imagining how they *could be*: with a true potential for invention, for *becoming*.

We are going to explore the first correlative notion of recursivity to understand how it applies to a conception of the soul first, and to technology through cybernetics after. Then, we will focus on memory as constitutive of technology first, and we will analyse its relationship with the psychedelic experience after. Finally, I reflect on previously drawn conclusions to attempt opening a new conceptual door towards an updated human/machine relationship.

2. Recursivity

2.1. Psyche

A psychedelic experience is concerned with the notion of the soul. Consciousness, mind and soul are often used interchangeably to express the manifesting effect of a psychedelic experience. We will see that the concept of the soul and the one of technology can be bridged through the notion of recursivity, a notion that Yuk Hui extensively analysed in his book *Recursivity and Contingency*[11].

A psychedelic experience sheds light on parts of consciousness that are not necessarily accessible otherwise. Aidan Lyon[12] introduces the opposite notion of *psychecryptic* experience from the Greek *psyche* and *cryptos* (to conceal/hide), that proves useful to clarify the concept of psychedelic. This type of experience can be induced, voluntarily or not, by substances or by

[11] Yuk Hui, *Recursivity and Contingency* (London, UK: Rowman & Littlefield International Ltd., 2019).
[12] Aidan Lyon, *Psychedelic Experience* (Oxford University Press., 2023), 6.

an activity such as meditation. In varying degrees of clarity and intensity, this experience brings to awareness some parts of our mind whether we make sense of it or not. In order to conceive this phenomenon more precisely, it is important to wonder what exactly is unveiled by this activity. For that, we must attempt providing a clearer conception of the soul.

Yuk Hui provides an insightful reflexion on this notion, using the concepts of recursivity and contingency. According to him, the soul is "the capacity of coming back to itself in order to know itself and determine itself"[13]. It is characterised by a looping movement: it is recursive, and it is open to contingency every time it departs from itself which thus constitutes its singularity. Traces remain every time the soul actualises its own reflection through loops. These traces can be understood as memories.

Fig. 1: Illustration of a recursive loop

The recursivity of the soul characterises both its structure and its operation. It sublates, that is, enables a synthesis between being and becoming which are opposed. As Yuk Hui states, "Being is preserved as a dynamic structure whose operation is open to the incoming of contingency: namely, becoming"[14]. The encounter with contingency *gives form*, it *informs*. It is open to

[13] Hui, 4.
[14] Hui, 5.

information and triggers the process of individuation[15] when combined with matter and energy. Recursivity therefore characterises being in becoming.

Additionally, Hui emphasises the difference pertaining to the conception of causality in the mechanist and the recursive modes of thinking. Mechanism, he states, presupposes a linear causality and the idea of a prime mover, where the beginning includes the end[16]. A deterministic conception ensues from it. By contrast, in the recursive mode of thinking including contingency, the cause must be found in the totality of the loop. The beginning is not the first cause but is only temporal and is always the end of another beginning. Because being is characterised in becoming, because the recursive soul is open to contingency and thus to information, the goal is not predefined. The history of the philosophy of sciences and knowledge, notably since Bertrand Russell, has taught us that the conception of causality was the sign of a science's "immaturity". He states: "The law of causality, I believe, like much that passes muster among philosophers, is a relic of a bygone age, surviving, like the monarchy, only because it is erroneously supposed to do no harm"[17]. Thus, we are tempted to go beyond the concept of linear causality, which the recursive system does not include.

We have seen that the idea of a recursive soul that is thus open to contingency and that characterises being in becoming also opposes the mechanist conception of linear causality. Instead, the soul is in continuous constitution, in relation with externality and open to contingency that feeds it with contingent information that participates in the process of individuation.

[15] Gilbert Simondon, *L'individuation à La Lumière Des Notions De Forme De D'information*, 3rd ed. (Grenoble, France: Millon, 2017).
[16] Hui, 7.
[17] Bertrand Russell, "The Notion of Cause," *Proceedings of the Aristotelian Society*, n.s., 13 (1912-13), 1-26

2.2. Cybernetics

Cybernetics includes recursivity as a central element of its methodology. In *Cybernetics: or, Control and Communication in the Animal and the Machine*[18], Norbert Wiener introduces the study of systems and complex systems where the concepts of feedback and information are central. Cybernetics attempted to attain the ultimate consecration of a science by unifying them all. Cyberneticians hoped to provide a unique methodology, with its specific tools, that would enable to understand the workings of the most diverse kinds of systems: from physics to biology to socio-economic[19]. Feedback is present when the output(s) of a system containing a certain function is *fed back* to its input(s). A feedback mechanism can also function with multiple systems as soon as those are connected such as the output of System 1 is fed to System 2 and the output of the latter is fed back to System 1 as its input ($S_1 \rightarrow S_2 \rightarrow S_1 \ldots$), in a recursive manner. Two types of feedback are notable: positive and negative. Negative feedback is self-correcting, meaning that it reacts to external information to maintain a state of stability. The phenomenon of homeostasis is one example. Positive feedback on the other hand is self-reinforcing, leading the system away from the previous status quo. According to cybernetic theory, feedback mechanism is at the core of a control system which identifies a desirable state and functions in accordance with it, integrating to a certain extent contingent information into its functioning.

Information is another key concept of cybernetic theory. Various definitions of this term have been proposed that are sometimes opposed[20]. Wiener saw information as a probabilistic measurement of order and disorder (i.e. negentropy and entropy). In other words, for Wiener, the production of information opposes the tendency of increasing entropy. Simondon, on the

[18] Norbert Wiener, *Cybernetics: Or Control and Communication in the Animal and the Machine* (Cambridge, MA: The MIT Press, 2019).
[19] W.Ross Ashby, *An Introduction to Cybernetics* (London: Chapman & Hall, 1957), 1-4.
[20] Hui, 130-133

other hand, proposed a non-probabilistic theory of information. His definition is well captured in the following terms:

> "Being nor not being information doesn't depend only on the internal characters of a structure; information is not a thing, but operation of a thing arriving in a system and producing a transformation. Information cannot be defined outside this act of transformative incidence and of the operation of reception."[21]

For him, information is a difference that produces an effect in the system and that may trigger the process of individuation. It is also important to emphasise that in Simondon's spectrum of concretisation – from abstract to concrete that is, integrated to an associated milieu and where all its elements compose a system that is coherent within itself and entirely unified – the concrete machine is one that is open to information. Being open to contingent information means possessing a margin of indetermination and being able to integrate its milieu into its functioning. The most preeminent example of such concrete technical object taken by the author himself is the one of the Guimbal engine[22,23] which includes both the cooling attribute and the driving force of the associated river into its functioning. This engine is also a good example of (negative) feedback control system, based on recursive causality[24].

According to Simondon, Wiener's theory does not fully define the cybernetic method. He proposes instead what he calls *general allagmatic* as the synthesis between cybernetics and positivism[25]. Indeed, Wiener's theory suggests an equivalence between machine and organism,

[21] Gilbert Simondon, *Communication et information* (Paris : Les éditions transparence, 2011), 159.
[22] Gilbert Simondon, *Du mode d'existence des objets techniques* (Paris: Aubier, 2012), 66-67.
[23] Gilbert Simondon, "Cybernétique et philosophie", 43.
[24] Hui, 192.
[25] Gilbert Simondon, "Épistémologie de la cybernétique", 189.

but a distinction between function and operation must be made. Cybernetic machines and organisms may display functional equivalence but not necessarily operational equivalence. In other words, they may achieve the same goal but in different ways: just like the chess engine AlphaZero and chess world champion Magnus Carlsen win games (function) differently (operation). As Hui emphasises, general allagmatic is a theory of conversion between structure and operation[26], where operation is defined by Simondon as "a conversion of a structure into another structure"[27], which corresponds to the principle of individuation.

As a result, recursivity – and its integration of contingency – are principles that correspond both to the soul and to the concrete machine. They follow the recursive principle of individuation that characterises being in becoming, open to contingency that is, information. Going back to the definition of the soul given by Yuk Hui, namely the capacity of coming back to itself in order to know itself and determine itself, we laid the necessary conceptual foundations via individuation to understand the recursive movement at play as well as the meaning of such determination *qua* becoming. Though, one crucial part of the definition remains unclear: *knowing itself* as a result of recursion and leading to becoming. How does this recursive being gets to *know itself*? Without expanding much, Hui refers to *memories* that are actualisations in traces every time the soul departs from itself. As mentioned in the introduction, *memory* is a concept that plays an important role both in the psychedelic experience and in the understanding of technology. This is what I intend to explore in the following part.

[26] Hui, 192.
[27] Gilbert Simondon *L'individu et sa genèse physico-biologique (IGB).* Paris: PUF, 1964, 263.

3. Memory

3.1. Technology, hypomnesis

Memory and technology are indeed inseparable. In fact, Bernard Stiegler argues that technics and technology are nothing other than exteriorised memory. The sense given to memory can be traced back to the Greeks. Plato differentiates between *hypomnesis* – recollection through the technical exteriorisation of memory – and *anamnesis* – the act of "pure" remembering. One telling example of *hypomnemata* is the book. Indeed, its technical form is generally composed of pages, ink and covers, that, put together, are the embodiment of the memory of how to create a book. Its content, that is, the knowledge that it contains also enables hypomnesis. More than that, it is also composed of *grammé* or discrete marks, that enables to historicise memory in epochs that Stiegler, after Derrida, calls *grammatisation*[28]. It is crucial to realise the extent of what technics encompasses: from artifacts to ways of performing a certain action, to the basis of our most ancient mode of communication: namely oral language and later, writing. This realisation is what allows Bernard Stiegler and Yuk Hui to emphasise that technics is prior to philosophy itself, to thinking itself[29].

These exteriorisations of memory are the manifestation of humanity's history. We can conceive them as building blocks that allow the evolution of humanity's technology. Indeed, the wheel must come first in order to participate in the achievement of a sustained food provision aimed at facilitating survival. Once a group of humans have secured basic needs for survival, they can develop technologies that serve other purposes. This logic of vertical technological evolution

[28] W.J.T Mitchell, Mark B.N Hansen, and Bernard Stiegler, "Memory," in *Critical Terms for Media Studies* (Chicago, Ill: University of Chicago Press, 2010).
[29] Geert Lovink and Yuk Hui, "Cybernetics for the Twenty-First Century: An Interview with Philosopher Yuk Hui - Journal #102 September 2019 - e-Flux," e-flux, 2019, https://www.e-flux.com/journal/102/282271/cybernetics-for-the-twenty-first-century-an-interview-with-philosopher-yuk-hui/.

also stands in a purely technical perspective. The external combustion engine that Simondon would call abstract must come before the internal combustion engine that requires an industrial ensemble for its production. In fact, technology follows a *necessary* evolution from an abstract mode to a concrete mode as Simondon explicitly showed[30]. Though, it is important to point out the distinction that Andre Leroi-Gourhan made between technical *facts* and *tendencies*[31]. Technical tendencies are necessary (e.g. the wheel) while facts are contingent (e.g. spokes constituting the wheel). According to him, the start of technological evolution is characterised by the emergence of technical tendencies whose universality stems from their optimal natural efficiency. Later, cultural influence drives the realisation of contingent technical facts which tend to increasingly diversify. In that sense, exteriorised memory as technology and technics tells us about our past, our present, but they are also the basis for our future. This assessment is also the result of Bernard Stiegler's reflection of the phenomenology of time-consciousness first introduced by Edmond Husserl.

The experience of time is, according to Husserl, characterised by the interplay of retentions and protentions. Retentions correspond to the capacity of remembering while protentions correspond to the capacity of anticipation. He denotes two of each: primary retention is the *now* that is *already past* and secondary retention is a memory or recollection. On the other hand, primary protention corresponds to the anticipation of what is coming *now*, right after the present that is already past. Secondary protention is the capacity of anticipating what is coming based on the memory of the temporal object in question, say, a piece of music. Thus, primary retention and protention appertain to the present object while secondary ones appertain to the past object. Husserl distinguishes clearly between primary and secondary, present and past, and

[30] Simondon, 2012.
[31] Leroi-Gourhan André, *Milieu Et Techniques* (Paris: Albin Michel, 1945).

therefore, between perception and imagination. In other words, he concludes that what is perceived cannot be imagined[32].

Bernard Stiegler draws upon this reflection and adds a third type of retention and protention. Tertiary retentions correspond to artificial memories: the source of hypomnesis. They invoke primary and secondary retentions and protentions with an exactitude of the experienced object, they are "orthothetic"[33]. He also comes to disagree with Husserl and asserts that protentions are produced by retentions. In fact, they form a transductive relation: perception requires imagination in order to be, and imagination always proceeds from perception. Retentions and protentions thus constitute a recursive circuit[34] that includes artificial memories in its functioning. In this sense, technicity is the support of both memory and anticipation and is thus an integral part of the retention-protention circuit of consciousness. For this reason, Hui claims that the soul is also a *tekhnesis*[35].

The increasing production, analysis and use of data by means of digital technologies provides a more concrete instance of tertiary protention, which corresponds to the determination of an event. A debt is a simple example of tertiary protention as it determines its reimbursement by its very existence – except in rare and specific cases. While Stiegler does not expand much on it, Hui argues that current algorithms have a great power of pre-emption of people's behaviour, thoughts, and choices[36]. The interplay of Big Data, artificial neural networks and statistics can allow to predict with surprising accuracy certain events and act in consequence. Taking a

[32] *Ph10 - 3e Cours - Les Concepts De Rétention Et De Protention (4)*, *YouTube* (Ars Industrialis, 2017), https://youtu.be/X9cDChpo7dE.
[33] Bernard Stiegler, *Philosophising by Accident,* trans. Benoît Dillet (Edinburgh: Edinburgh University Press, 2017), 61.
[34] Hui, 201.
[35] Hui, 201.
[36] Hui, 210-215.

different aspect, the Cambridge Analytica affair can be interpreted as a massive political manipulation enabled by new technologies. However, models are not ubiquitous and most of humanity's behaviour escape from the collective power of digital technologies. Alerting for the *becoming deterministic* of our existences seems therefore hasty. Nevertheless, it is important to point out the potential manipulation of the conscious and the unconscious by means of the pre-emptive power of new technologies.

In *L'individuation à la lumière des notions de forme et d'information* (ILFI), Simondon faces the question of individuation after Aristotle. He raises the problem of hylomorphism that takes the individual as already individuated and proposes a new conception of individuation being the result of a resolution of a problem in a milieu, using matter, energy and information[37]. As explained in the first part, Simondon's individuation is a process that considers the individual in becoming: as always individuating. The individual carries a reserve of individuation which resides in the couple that it forms with its *associated milieu*. They are the two parts of a symbol (in the Greek sense σύμβολον, súmbolon)[38] that together form the ongoing individuation.

For Stiegler, human individuation is triple: it is simultaneously psychic, collective and technical[39]. The technical milieu is the result of the modification of the environment by humans through technical activities[40]. It is also what links the psychic and the collective together: it is the medium of transindividual relations corresponding to the reciprocal relation between

[37] Gilbert Simondon and Jacques Garelli, *L'individuation à La Lumière Des Notions De Forme Et D'information* (Grenoble: Millon, 2017), 63.
[38] Simondon, 2017, 64.
[39] "Individuation," Ars industrialis, accessed December 27, 2022, https://arsindustrialis.org/individuation.
[40] Gilbert Simondon, 'Culture and technics (1965)', *Radical Philosophy* 189, Jan/Feb 2015, pp. 17–23.

psychic (interior) and collective (exterior) individuations[41]. Therefore, the *hypomnesic milieu* is an integral part of the process of human individuation.

With time, humanity has been facing a phenomenon of universalisation of memory through the increasing production and consumption of widely experienced cultural objects such as movies, music or books… fuelled notably by what Theodor Adorno and Max Horkheimer coined the *Kulturindustrie*[42]. Lyotard talks about the birth of a *hegemonic teleculture*[43] to refer to a culture whose objects are removed from their original spatiality and temporality. Millions of videogame players worldwide join forces every day to achieve common goals, and anyone equipped with a smartphone can listen to Michael Jackson's *Thriller* at the exact same time. While before telegraphy, listening to Mozart's Requiem required the gathering of numerous people and resources at the same time and place.

The twentieth century has seen the emergence of a large-scale common memory that, according to the above, continues having a universalising and synchronising influence on people's perception and imagination. This assessment should also be enlarged to a specific type of objects that were born more recently namely: software. They differ from other objects insofar as they are made of a specific architecture that come with a set of affordances[44], and that virtually constitutes the space of action for users. More, they are *enframing* (*Gestell*): they constitute a "mode of ordering" that determines how reality appears. While there is a certain contingency of materiality in physical objects such as a chair (i.e. which affords to sit on it but

[41] Muriel Combes, *Gilbert Simondon and the Philosophy of the Transindividual* (Cambridge, MA: MIT Press, 2013), 25.
[42] Max Horkheimer and Theodor W. Adorno, *La Dialectique De La Raison Fragments Philosophiques* (Paris: Gallimard, 1983).
[43] Lyotard Jean-François, *The Inhuman: Reflections on Time* (Cambridge: Polity Press, 1991), 50.
[44] For a detailed definition of affordance, see: Jenny L. Davis and James B. Chouinard, "Theorizing Affordances: From Request to Refuse," *Bulletin of Science, Technology &Amp; Society* 36, no. 4 (2016): pp. 241-248, https://doi.org/10.1177/0270467617714944.

also to stand on it to reach high objects), such contingency is much less present if not inexistant in the case of software.

There is therefore a universalisation of memory through globalised objects, but also a phenomenon of universalisation of physical and mental behaviours that comes from the use of such types of objects. As Viktor Shklovsky points out in Art as Technique, when "perception becomes habitual, it becomes automatic"[45]. Habitual use of a software makes its use as well as the physical and especially psychological schemas associated to it automatic to the individual. As a result, we are led to think that users tend to take software's architecture and affordances as necessary, as technical tendencies to take Leroi-Gourhan's formulation, when they are not necessarily so.

The above reflection leads us to realise that technology is a manifestation of the past as well as the basis for the unfolding future. The phenomena of synchronisation and universalisation of memories driven by the telegraphiable nature of modern technology as well as its pre-emptive capacity seem to draw an obscure picture for the becoming of humanity. Indeed, we are led to discern a closed recursive system that seems scarcely open to contingency.

3.2. Psychedelic, anamnesis

> "Then my whole life flashed in my mind from birth to the present, with every detail that ever happened, every feeling and thought, visual and emotional was there in an instant."[46]

[45] Julie Rivkin, Michael Ryan, and Viktor Shklosvky, in *Literary Theory: An Anthology*, 2nd ed. (Malden etc.: Wiley Blackwell, 2017), pp. 15-21.
[46] Oliver Sacks, *Hallucinations* (London: Picador, 2012), 112 in Christine Hauskeller and Sjöstedt-H Peter, *Philosophy and Psychedelics: Frameworks for Exceptional Experience* (London: Bloomsbury Academic, 2022), 3.

Technology as exteriorised memory involves recollection, or hypomnesis, which is opposed to anamnesis. In *Phaedrus*, Plato differentiates between recollection on one hand, which is caused by "external signs" and memory on the other, considered as "pure" and resorting to "internal resources"[47]. What is, then, this other nature of memory and how does it relate to the psychedelic experience?

When Aidan Lyon talks about the rememberance of long-lost memories as a simple form of psychedelic experience[48], he does not seem to refer to mere recollection (hypomnesis) using a technological medium. The recent revival of research on psychedelics tempts media theorists to characterise psychedelic substances and practices as media. Our exploration so far leads us to suggest a refinement of this characterisation. Indeed, perceptions resulting from a psychedelic experience should be understood as finding their roots in the past, according to the retention-protention cycle explicated above, and the transductive relation between perception and imagination associated to it. As a result, psychedelic experiences are always about memory: they always tell us about our past, in the present. However, psychedelically induced *rememberance* can be distinguished from technically induced *recollection*. Psychedelic activity or substance and technology can therefore be conceptualised both as media, but of different nature. I suggest that while technology is a medium that only allows *hypomnesis*, psychedelia is one that allows *anamnesis*.

In his introduction, Lyon shows prudence in asserting that psychedelics bring about experiences that involve the recollection of long-lost memories. According to him, more

[47] Neil Postman and Neil Postman, "The Judgment of the Thamus," in *Technopoly: The Surrender of Culture to Technology* (New York: Vintage Books, 1993), pp. 3-20.
[48] Lyon, 15.

controlled and well-designed studies are still necessary to demonstrate the *genuine* nature of such memories, even though the evidence is "very suggestive and positive" that is does so. They could, after all, be "merely fantasies that are constructed on the fly and *confabulated* as memories"[49]. To this, I suggest that the quality of said memories – genuine as actually happened versus confabulated as never happened – takes nothing away from the revealing nature of such experiences, and the characterisation of psychedelic perceptions as memories. Whether an event actually happened or not does not matter since the perception can still be as telling of the past and the present. The recollection of an event that happened, say, my first bicycle ride, is closer to hypomnesis because its truest representation can only be carried by exteriorisation in technical terms. While the "confabulated memory" of my first skydiving (I am afraid of heights and have never jumped out of a plane) can instead be the representation of inner fears, such as one caused by the imminent change of environment caused by a major life change. This type of perception might bring to our awareness hidden and unconscious mental states, that are rooted in past experience, and might thus be closer to anamnesis. Contrary to the memory of my first bicycle ride that can be captured in video, this one can only be felt.

In a chapter titled *Logo et tekhnè, ou la télégraphie*[50], Jean-François Lyotard distinguishes three sorts of memory-effects of technological inscription that coincide with three sorts of temporal synthesis. Breaching corresponding to habit, scanning to remembering and passing to anamnesis[51]. He defined remembering as follows:

[49] Lyon, 16.
[50] Lyotard, pp.47-57.
[51] Lyotard, 48.

> "The synthesis of remembering implies not only the retention of the past in the present as present, but the synthesis of the past as such and its reactualization as past in the present (of consciousness). Remembering implies the identification of what is remembered, and its classification in a calendar and a cartography"[52].

Lyotard's *remembering* corresponds to what I referred to as *genuine* memory above: a memory that *actually happened* and that is capturable, that is possible to exteriorise, to *spatialise* and *temporalise*, that is *objectifiable* as Stiegler would put it. Remembering, Yuk Hui adds, "always searches for a narrative with an origin, or a beginning"[53]. Thus, it seems to appertain to a schema of linear causality where events follow from each other (mechanism). In a recursive loop, on the other hand, such as we represented the soul in the second part, the cause is to be found in its totality. It must be taken *as a whole*.

Jussi Jylkkä (2021) claims that psychedelic experience can trigger a "unitary" insight to the subject: the belief that "all is one"[54]. Evidence shows a disappearance of the ego, or "ego-death" as Timothy Leary coined it[55]. Psychedelic insights can be felt as true and a unitary, even merging, feeling can occur between the subject, "I", and the outside, "the world"[56]. Distortion of time and space have also been reported[57]. Either felt as infinite or non-existent, the feeling of a linear time is altered. The phenomenology of unitary psychedelic experience seems to

[52] Lyotard, 51.
[53] Yuk Hui, "Anamnesis and Re-Orientation". In: Yuk Hui, Andreas Broeckmann (Hg.): *30 Years After Les Immatériaux. Art, Science and Theory*. (Lüneburg: meson press 2015), S. 179–201.
[54] Jussi Jylkkä, "Reconciling Mystical Experiences with Naturalistic Psychedelic Science: Reply to Sanders and Zijlmans," *ACS Pharmacology &Amp; Translational Science* 4, no. 4 (August 2021): pp. 1468-1470, https://doi.org/10.1021/acsptsci.1c00137.
[55] Timothy Leary et al., *The Psychedelic Experience: A Manual Based on the Tibetan Book of the Dead* (New York: Citadel Press, 2017).
[56] Richard Evans Schultes, Albert Hofmann, and Rätsch Christian, *Plants of the Gods: Their Sacred, Healing and Hallucinogenic Powers* (Rochester, VT: Healing Arts Press, 2006).
[57] MW Johnson, WA Richards, and RR Griffiths, "Human Hallucinogen Research: Guidelines for Safety," *Journal of Psychopharmacology* 22, no. 6 (2008): pp. 603-620, 612 https://doi.org/10.1177/0269881108093587.

coincide with the recursive conception of being developed in the second part, which suggests a principle of immanence, while mechanism presupposes a linear causality and transcendence[58]. Indeed, the feeling of "truth" in a psychedelic experience is immanent: its cause is to be found in *the whole*.

The example of Proust's madeleine is often used to illustrate the notion of anamnesis. In *Swann's way*, the narrator "mechanically" raises to his lips a piece of madeleine and says:

> "An exquisite pleasure had invaded my senses, but individual, detached, with no suggestion of its origin (*cause*). And at once the vicissitudes of life had become indifferent to me, its disasters innocuous, its brevity illusory — this new sensation having had on me the effect which love has of filling me with a precious essence; or rather this essence was not in me, it was myself."[59]

The experience felt by the protagonist seems indeed quite psychedelic. His gesture leading to it is "mechanic" at first. His perception of eating is habitual, automatic, driven by norms of breaching. Then, the taste of the madeleine fills him with this "essence" of which he cannot find the cause. Instead, he makes one with it, it is "himself". The memory *is* himself. When the feeling slowly dissipates, he repeats the same activity, the same technique[60], in hope to revive it. But in vain: "the potion is losing its magic". He adds: "it is plain that the object of my quest, the truth, lies not in the cup but in myself"[61]. The memory or the part of his consciousness – of himself – is not attainable *technically*, it escapes the *logos*. The narrator must fight to attempt

[58] Hui, 8.
[59] Marcel Proust, *In Search of Lost Time*, trans. C. K. Scott Moncrieff and Sydney Schiff (Centaur Editions, 2016), 43.
[60] Technique is defined here not by its outcome but by the manner of achieving its outcome.
[61] Proust, 43.

working-through (Lyotard's reading of Freud's *Durcharbeiten* as anamnesis[62]) and finally locate the memory in his childhood, remember the cause of his feeling. This excerpt thus captures the three temporal syntheses pointed out by Lyotard: habit, anamnesis and finally, rememberance.

In his explanation of Stiegler's concepts of retentions and protentions, Hui compares Proust's madeleine and a CD as both tertiary retentions. The CD however is said to be more so given its "orthothetic"[63] nature. The present argument suggests instead that Proust's madeleine cannot be characterised as tertiary retention since it is not exteriorised and cannot be so without denying its very essence. Eating a piece of madeleine cannot be understood as a technique to achieve a determined outcome, even for the narrator, because the magical effect fades as he repeats the gesture. Instead, this memory seems closer to a psychedelic experience involving anamnesis.

The "truth" that the narrator refers to resonates with what William James called "noetic quality" namely, insights of truth that cannot be reached by the discursive intellect. It cannot be objectively demonstrated; it can only be felt. Surely, it is not question here of the rational truth that 1 + 1 = 2. It is rather question of a truth that escapes the rational realm, a truth that appertains to what Yuk Hui calls the "non-rational"[64]. The "beautiful", the "sublime", or "God" are all founded on an epistemology of the non-rational. They can all be felt as true but cannot be demonstrated as such. They are not irrational either, but simply do not appertain to the realm of rationality. This assessment confirms from a different angle Hauskeller's claim that "the phenomenology of unitary psychedelic experience cannot be sufficiently understood by

[62] Hui, "*Anamnesis and Re-orientation"*, 185-186.
[63] Hui (2019), 201.
[64] Yuk Hui, *Art and Cosmotechnics* (Minneapolis, MN: e-flux, 2021), 123.

empirical science because it betrays in itself the very limitations of such science"[65]. For Hui, art "open[s] that which science conceals"[66] in a world dominated by the scientific method. According to him, art can express this non-rational truth. It is a mode of expression that resists mechanical automation.

We are therefore led to conclude that the psychedelic experience involves memory, and especially anamnesis. These types of memory seem to appertain to an epistemology of the non-rational: they cannot be exteriorised rationally. They cannot be recorded nor expressed verbally since those activities are essentially technical and therefore, involve *logos.* They might, however, be experienced artistically through poetry or painting for instance. In *Swann's way* again, the narrator decides to examine his own mind to discover the "truth":

> "But how? What an abyss of uncertainty whenever the mind feels that some part of it has strayed beyond its own borders; when it, the seeker, is at once the dark region through which it must go seeking, where all its equipment will avail it nothing.
> *Seek? More than that: create.*"[67] (italics added by the author).

The narrator invites us to *create* instead of *seeking* in order to reach what he calls "the truth" and that Yuk Hui would call the non-rational. In the next part, we are going to dive into the digital machine using psychedelic thinking to play with the opacity of our perceptions regarding digital technologies.

[65] Christine Hauskeller and Sjöstedt-H Peter, *Philosophy and Psychedelics: Frameworks for Exceptional Experience* (London: Bloomsbury Academic, 2022), 8.
[66] Hui, 2021, 211.
[67] Proust, 43.

4. A psychedelic trip inside the digital machine

Throughout this paper, I have touched upon some of the sources of critic directed towards technology that can be found in recent literature. I have also drawn upon some aspects of Gilbert Simondon's philosophy of technology to reflect on the link between technology and memory. The formidable originality of Simondon comes in part from his acute look *into* the technical object. He does not limit himself to the theoretical analysis of such technology but completes his examination with a precise dissection of the object. His life ended before the establishment of technical information networks as we know them today. Nevertheless, his philosophy remains exceptionally modern and will prove useful to explore the composition of today's digital machine, and hint at a possibility for future becoming.

This part is an invitation for a psychedelic experience inside the digital machine first for the reason advanced in the previous part's conclusion that is, to play with the opacity of our perceptions regarding new technologies. Second, because a psychedelic trip appears appropriate given the effect psychedelia has on creativity. Responding to a suggestion that psychedelics are mind-*creating*, Lyon argues that psychedelics bring to our conscious experience a creativity that was previously hidden outside of our awareness[68] and are therefore truly mind-*revealing*.

The task of achieving a better understanding of digital technology in order to take a more active part in the advent of digitalisation instead of giving up to its chaotic unfolding is taken up by Bernhard Rieder in his book *Engines of Order*[69]. Indeed, he engages in a meticulous analysis of software using the work of Simondon that provides valuable insights for our endeavour.

[68] Lyon, 16.
[69] Bernhard Rieder, *Engines of Order* (Amsterdam University Press, 2020).

More than 60 years ago, Simondon noted the absence of a true technical culture. For him, culture evolves slowly, slower than the technical reality in society. This results in a *déphasage* between culture and technics where culture no longer plays its regulative and integrative role between humans and their technical environment[70]. This phenomenon leads to false representations and fear towards it. As Rieder points out, current critic of software focuses more on their societal effects, taking it as a singular category, as static or given, rather than on their structure and operation[71]. This task is however crucial.

Rieder draws upon Simondon's distinction between elements, individuals and ensembles as different technical domains to suggest a technical definition of software. Elements are "carriers of 'pure' or 'free' technicity because they are not yet combined into systems that […] put certain *demands* on them"[72]. Individuals are stable systems composed of elements that find their concretisation in the inclusion of an associated milieu. According to Rieder, hardware is itself composed of elements but cannot function without software otherwise it remains element, and *vice versa*. In fact, software defines how hardware functions. As a result, the digital machine (e.g., computer, smartphone) can be conceptualised as a technical individual only when composed of both. This assessment allows Rieder to conclude that programming "is not simply a form of *adapting* a machine, [but] it is an integral part of *making* a machine and, consequently, a genuine domain of technical creation and invention"[73]. However, creating software requires skills that are not necessarily mastered by all, especially in a society made of labour division. Nevertheless, the individual formed by software and hardware is what

[70] Gilbert Hottois, *Simondon Et La Philosophie De La « Culture Technique »* (Bruxelles: De Boeck Université, 1993).
[71] Rieder, 82.
[72] Rieder, 65.
[73] Rieder, 66

Simondon would call an "open machine" that is, open to the incoming of information. It has at least this potential, which leads us to assert that software's *being* can be characterised in *becoming*, following a principle of recursive causality that integrates contingency.

According to Simondon, technological development goes through different phases: artisanal first, that is characteristic of the abstract object, and industrial then, enabling concretisation. In the first phase, the craftsperson is a true mediator and operator, being the source of both energy and information, while his workshop constitutes his associated milieu. Energy comes from their gesture and muscular force, while information is found in their knowledge and their manipulation of tools. In the industrial phase however, the source of information and the source of energy split up. Humans provide information, while Nature provides energy. The information provided comes itself in different times and levels: in invention, in the construction of the machine and its maintenance, in learning its functioning and finally in its use. The provision of information is thus divided, requiring numerous people at different times. This reality is the source, according to Simondon, of both the phenomena of dehumanisation of the labourer and the misery of the inventor[74], in short, of modern *alienation.* It appears therefore necessary to bring the sources of information, as well as energy, closer together.

Digital technologies and information networks seem to provide a potential for that. Indeed, the quasi-instantaneity of information sharing and the possible networking of billions of digital machines around the globe can technically bring the four sources of information back together and even subdivide them further. In that sense, anyone could ideally become inventor to user, thanks to the interaction of a myriad of contributors. Indeed, the internet today enables anyone

[74] Gilbert Simondon, "Mentalité Technique," *Revue Philosophique De La France Et De L'étranger* 131, no. 3 (2006): p. 343, https://doi.org/10.3917/rphi.063.0343.

with enough time to learn how to master the skills for software-making. The reasons why it is not so are to be found in the global societal organisation, involving economic, political, and other motives that constrain humans from assuming all the sources of information that are necessary in the industrial domain. Indeed, even if the knowledge to invent, complete or improve software comes from the interconnexion of billions of humans operating machines, the human individual still is the mediator between information and energy.

However, current software appears relatively closed. Design and use are too often separated. Software's openness to information mediated by the human individual is limited to specific areas that are often designed to serve a specific purpose, such as the accumulation of benefits in the case of private organisations. Stiegler saw in *digital hypomnemata* the hope of the restoration of a positive dimension to our co-evolution with technics, due to their potential for self-expression and hence, self-exteriorization[75]. Digital machines seem indeed to carry this potential, but our examination of the present state leads us to believe that the potential for invention remains limited. Most used smartphone applications such as social networks and messaging services are *ready-to-use* and are taken for their mere and static utility. They are painted on a Cartesian schema linking utility to use, upheld by a principle of linear causality. Their potential, however, given their recursive structure and operation, always open to information, is characterised in movement, in continuous *becoming.* Instead, there is currently no real potential for invention. The user might develop an original invention based on her personal and situated needs but has no means to implement it. Even though the new technological phase characterised by information technologies changes the mode of information input necessary for the ontogenesis of the technical individual. Thus, there is still

[75] Stiegler, 65.

a *déphasage* between culture and technics, that constrains both the potential of digital machines and the human in its milieu.

In *Mentalité technique*, Simondon draws an analogy between technics and *schemes of intelligibility*. He argues that the operation of the machine in Cartesian mechanism is analogous to the operation of logical thought[76]. The mechanist machine corresponds to a lossless transfer system, which is analogous to logical thought that is structured from premisses to conclusion. Science and philosophy for instance, Simondon claims, are only possible because of this lossless transfer. Cybernetic, on the other hand, is characterised by a recursive scheme allowing adaptation towards a specific end and enabled the study of regulations in the domains of the living and non-living and phenomena subject to becoming like the balance between species and natural phenomena like the variation in lakes level[77]. I argue that the technical mentality pertaining to digital technologies, characterised by recursivity and contingency, involves a new kind of digital individual that ought to be conceived as having the potential to be "*increased, continued, amplified without defacement or erasure*"[78].

How can we conceive a future technology whose being is characterised in becoming? One that cannot be mapped in time and space but rather being in perpetual actuality? One that does not involve recollection but pure rememberance of itself? Not hypomnesis but anamnesis? One that does not find its cause in its creation but in the totality of its continuous becoming? One that can only be intuitively felt and not discursively rationalised? Such is the object, fundamentally, of the present work.

[76] Simondon, 2006, 344
[77] Simondon, 2006, 345.
[78] Simondon, 2006, 357.

References

Ashby, W.Ross. *An Introduction to Cybernetics*. London: Chapman & Hall, 1957.

Combes, Muriel. *Gilbert Simondon and the Philosophy of the Transindividual*. Cambridge, MA: MIT Press, 2013.

Davis, Jenny L., and James B. Chouinard. "Theorizing Affordances: From Request to Refuse." *Bulletin of Science, Technology & Society* 36, no. 4 (2016): 241–48. https://doi.org/10.1177/0270467617714944.

Dencik, Lina. "Surveillance Realism and the Politics of Imagination: Is There No Alternative?" Krisis, 2018. https://archive.krisis.eu/surveillance-realism-and-the-politics-of-imagination-is-there-no-alternative/.

Dickins, Robert. "Power and the Sublime in Aldous Huxley's Drug Aesthetics." Essay. In *Philosophy and Psychedelics: Frameworks for Exceptional Experience*. S.l.: BLOOMSBURY ACADEMIC, 2023.

Fisher, Mark. *Capitalist Realism: Is There No Alternative?* UK: Zero Books , 2009.

Hauskeller, Christine, and Sjöstedt-H Peter. *Philosophy and Psychedelics: Frameworks for Exceptional Experience*. London: Bloomsbury Academic, 2022.

Horkheimer, Max, and Theodor W. Adorno. *La Dialectique De La Raison Fragments Philosophiques*. Paris: Gallimard, 1983.

Hottois, Gilbert. *Simondon Et La Philosophie De La « Culture Technique »*. Bruxelles: De Boeck Université, 1993.

Hui, Yuk. *Art and Cosmotechnics*. Minneapolis, MN: e-flux, 2021.

Hui, Yuk. *Recursivity and Contingency*. London, UK: Rowman & Littlefield International Ltd., 2019.

"Individuation." Ars industrialis. Accessed December 27, 2022. https://arsindustrialis.org/individuation.

Johnson, MW, WA Richards, and RR Griffiths. "Human Hallucinogen Research: Guidelines for Safety." *Journal of Psychopharmacology* 22, no. 6 (2008): 603–20. https://doi.org/10.1177/0269881108093587.

Jylkkä, Jussi. "Reconciling Mystical Experiences with Naturalistic Psychedelic Science: Reply to Sanders and Zijlmans." *ACS Pharmacology & Translational Science* 4, no. 4 (2021): 1468–70. https://doi.org/10.1021/acsptsci.1c00137.

Langlitz, Nicolas. *Neuropsychedelia: The Revival of Hallucinogen Research since the Decade of the Brain*. Berkeley: University of California Press, 2012.

Leary, Timothy, Ralph Metzner, Ram Dass, and Karma-gliṅ-pa. *The Psychedelic Experience: A Manual Based on the Tibetan Book of the Dead*. New York: Citadel Press, 2017.

Leroi-Gourhan André. *Milieu Et Techniques*. Paris: Albin Michel, 1945.

Letheby, Chris. *Philosophy of Psychedelics*. Oxford: Oxford University Press, 2021.

Lovink, Geert, and Yuk Hui. "Cybernetics for the Twenty-First Century: An Interview with Philosopher Yuk Hui - Journal #102 September 2019 - e-Flux." e-flux, 2019. https://www.e-flux.com/journal/102/282271/cybernetics-for-the-twenty-first-century-an-interview-with-philosopher-yuk-hui/.

Lyon, Aidan, and Anya Farennikova. "Stepping through the Psychedelic Looking-Glass." *Philosophy and the Mind Sciences* 3 (2022). https://doi.org/10.33735/phimisci.2022.9323.

Lyon, Aidan. *Psychedelic Experience*. Oxford University Press. , 2023.

Lyotard Jean-François. *The Inhuman: Reflections on Time*. Cambridge: Polity Press, 1991.

Mitchell, W.J.T, Mark B.N Hansen, and Bernard Stiegler. "Memory." Essay. In *Critical Terms for Media Studies*. Chicago, Ill: University of Chicago Press, 2010.

Ph10 - 3e Cours - Les Concepts De Rétention Et De Protention (4). *YouTube*. Ars Industrialis, 2017. https://youtu.be/X9cDChpo7dE.

Postman, Neil, and Neil Postman. "The Judgment of the Thamus." Essay. In *Technopoly: The Surrender of Culture to Technology*, 3–20. New York: Vintage Books, 1993.

Proust, Marcel. *In Search of Lost Time* . Translated by C. K. Scott Moncrieff and Sydney Schiff. Centaur Editions, 2016.

Rieder, Bernhard. *Engines of Order*. Amsterdam University Press, 2020.

Rivkin, Julie, Michael Ryan, and Viktor Shklosvky. Essay. In *Literary Theory: An Anthology*, 2nd ed., 15–21. Malden etc.: Wiley Blackwell, 2017.

Schultes, Richard Evans, Albert Hofmann, and Rätsch Christian. *Plants of the Gods: Their Sacred, Healing and Hallucinogenic Powers*. Rochester, VT: Healing Arts Press, 2006.

Simondon, Gilbert, and Jacques Garelli. *L'individuation à La Lumière Des Notions De Forme Et D'information*. Grenoble: Millon, 2017.

Simondon, Gilbert. *Du Mode D'existence Des Objets Techniques*. París: Aubier, 2012.

Simondon, Gilbert. *L'individuation à La Lumière Des Notions De Forme De D'information*. 3rd ed. Grenoble, France: Millon, 2017.

Simondon, Gilbert. "Mentalité Technique." *Revue philosophique de la France et de l'étranger* 131, no. 3 (2006): 343. https://doi.org/10.3917/rphi.063.0343.

Umpleby, Stuart A. “A HISTORY OF THE CYBERNETICS MOVEMENT IN THE UNITED STATES.” *Journal of the Washington Academy of Sciences* 91, no. 2 (2005): 54–66. https://doi.org/https://www.jstor.org/stable/24531187.

Wiener, Norbert. *Cybernetics: Or Control and Communication in the Animal and the Machine*. Cambridge, MA: The MIT Press, 2019.