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Vitor Moura Lima

Defying the Gods and the Odds:
on Being a Cyborg

Tese de Doutorado

Thesis presented to the Programa de Pós-graduação em Administração de Empresas of PUC-Rio in partial fulfillment of the requirements for the degree of Doutor em Administração de Empresas.

Advisor: Prof. Luís Alexandre Grubits de Paula Pessôa
Co-Advisor: Prof. Russell William Belk

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To my family.

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Abstract

Lima, Vitor Moura; Pessôa, Luís Alexandre Grubits de Paula (advisor); Belk, Russell William (co-advisor). **Defying the Gods and the Odds: on Being a Cyborg**. Rio de Janeiro, 2020. 190p. Tese de doutorado - Departamento de Administração, Pontifícia Universidade Católica do Rio de Janeiro.

Humanity's fascination for achieving something beyond what is given by an Almighty divinity can be found in many episodes since ancient times. Our quest for creation, extension, and controlling different forms of life, such as gods do, has been semiotically echoed through religions, myths, SCI-FI productions, and, of course, science. From the magical creation of Homunculi to the Altered Carbon dystopian setting, several issues arise from this complex relationship, perhaps mainly because of the rebellious act of benevolence committed by Prometheus, the fire (technology)-bringer. Although prior studies investigated technology consumption from different perspectives, they mostly employed a Heideggerian approach to them and, thus, viewed the technological device as only a tool. Given the consumption of insideable technologies, the way that we have been experiencing the dissolving boundaries between humans and machines, and the emerging changes in the human ontological status, the ensuing consequences, remain overlooked. To explore this singular phenomenon, based on abductive reasoning, I developed my theorization on the Interactive Self, mostly based on Sartre's latter existential-phenomenology approach. To do so, I had a prolonged and intensive immersion in the biohacking context, specifically grinding (cyborgs), that began in 2017 with a combination of netnography, ethnography, phenomenological interviews, and autoethnography. To analyze the large collected dataset, I followed the French Semiotics postulates, especially taking into account the existential-phenomenological turn in the Parisian School of Semiotics. As a result of this inquiry, my theoretical claim is that the Interactive Self is sustained by the process of the externalization of the internal and the internalization of the external in dialectical and perpetual dynamics. To sustain this argument and answer my research questions, I present this novel concept in two ways: First, I describe the conceptual components for the ontological condition of being a cyborg by means of NFC microchip consumption. Subsequently, I promote an articulation of Sartre's modes of existence within the aspect of volitional cyborgization, which places

humanity one step closer in its ancient and ongoing dream of performing god-like miracles. In considering technology not as a mere tool to an end, as Heidegger would, I argue that it is a living, magical, and vibrant matter that has the power to change our ontological condition as human beings. In doing so, my research contributes to discussions on technology consumption, identity projects, and, tangentially, bioethics in consumer research within the context of Transhumanism.

Keywords

Transhumanism; Cyborgs; Extended Self; Interactive Self; Semiotics.

Resumo

Lima, Vitor Moura; Pessôa, Luís Alexandre Grubits de Paula (orientador); Belk, Russell William (co-orientador). **Desafiando os Deuses e as probabilidades: sobre ser um cyborg**. Rio de Janeiro, 2020. 190p. Tese de doutorado - Departamento de Administração, Pontifícia Universidade Católica do Rio de Janeiro.

O fascínio da humanidade por alcançar algo além do que é dado por uma divindade pode ser encontrado em diversos episódios desde os tempos mais remotos. Nossa busca por criação, extensão e controle de diferentes formas de vida, assim como os deuses fazem, ecoa semioticamente por narrativas religiosas, mitos, produções de ficção científica e, certamente, ciência. Desde a criação mágica dos Homúnculos até a distopia de Altered Carbon, várias questões surgem desse relacionamento complexo, provavelmente devido ao benevolente ato de rebelião cometido por Prometeu, o ladrão do fogo (ou tecnologia). Embora estudos anteriores tenham investigado o consumo de tecnologia com base em diferentes perspectivas, usaram majoritariamente uma abordagem Heideggeriana e, portanto, conceberam a tecnologia apenas como uma ferramenta. Dado o consumo de tecnologias internas (*insideable technologies*), a maneira como experimentamos a dissolução de barreiras entre humanos e máquinas, as mudanças emergentes no status ontológico do ser humano e as consequências de fazê-lo permanecem negligenciadas. Para explorar esse fenômeno singular, baseado em raciocínio abdutivo, desenvolvi minha teorização sobre o Self Interativo, tendo como base a filosofia fenomenológica-existencial de Sartre em seus últimos trabalhos. Para isso, tive uma imersão prolongada e intensa no contexto de *biohacking*, especificamente *grinding* (ciborgues), que começou em 2017 com uma combinação de netnografia, etnografia, entrevistas fenomenológicas e autoetnografia. Para analisar o grande conjunto de dados coletados, segui os postulados da semiótica francesa, particularmente levando em conta a virada fenomenológico-existencial na Escola Parisiense de Semiótica. Como resultado dessa investigação, minha proposição teórica é que o Self Interativo é sustentado pelo processo de externalização do interno e da internalização do externo em uma dinâmica dialética e perpétua. Para amparar esse argumento e responder às minhas perguntas de pesquisa, apresento o novo conceito de duas maneiras: primeiro, descrevo a estrutura para o eterno

processo de ser um ciborgue por meio do consumo de microchips com NFC. Posteriormente, promovo uma articulação dos modos de existência de Sartre dentro do aspecto da ciborguização volitiva, o que coloca a humanidade um passo mais perto de seu antigo sonho de realizar milagres semelhantes aos deuses. Ao considerar a tecnologia, não como uma mera ferramenta para um fim, como faria Heidegger, afirmo que é um objeto vivo, mágico e vibrante que tem o poder de mudar nossa condição ontológica como seres humanos. Ao fazer isso, minha pesquisa contribui para discussões sobre consumo de tecnologia, projetos de identidade e, tangencialmente, bioética na pesquisa do consumidor no contexto do Transumanismo.

Palavras-chave

Transumanismo; Ciborgues; Self Estendido; Self Interativo; Semiótica.

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"This is your last chance. After this, there is no turning back. You take the blue pill the story ends, you wake up in your bed and believe whatever you want to believe. You take the red pill you stay in Wonderland and I show you how deep the rabbit-hole goes."

Morpheus, *The Matrix*

1.
Chapter: Introduction

> Hi everyone, Amal Graafstra, and this talk is about biohacking. So, what is backing? Really, it's a term that's evolving. Biohacking involves technologies that are advancing a rate that allows to 3D print organic tissues to develop protocols and methods for hacking the mind and body and to even you know decompile DNA to the operating system of life [...] But really with the time constraint we're going to narrow on grinders[1]. Grinders are Do-It-Yourself cyborgs that are upgrading their bodies with hardware without waiting for corporate product developed cycles or, you know, authorities to say it's okay. I was working with a bunch of medical clinics and doctors and I was doing fairly good job, I guess. So, I became popular and started getting a quite a large keyring collected. So, I had to carry this around with me everywhere and it just became pain. So, I had an office door that locked behind me every time I left. Even if I had to run to the car to grab heavy server equipment so, you know, I will come back to the door and just be like… ooohhh It got me thinking about keys. So, what are keys? Keys are kind archaic, they're hunks metal cut in a specific way that identify you as an authorized person to go through that door. And I thought that's…humm… we can do better. I want the door to just know who I am and just open. So, I started looking at biometric technologies like fingerprint readers, eye retina scanners, that kind of stuff, and the problem is that those technologies are little bit bulky, little bit clunky and at the time they weren't very reliable [...] So, I looked at access cards, RFID[2] access cards. So those seemed like a great solution. The only problem was I don't wear things; I leave my keys and wallet and… I leave things and so I knew that if I put one of these on there, I would just walk out the door and go ooohhh soon, you know, it's shocking. You know, so I started looking at the types of implants that pets were getting. The dogs and cats go to the vet to get chip injected in their neck, and I said… that's RFID. Maybe I can find some kind of solution. And did little research, called the company that made one of these chips and I said that's great and all, but do you have a kind of more standardized version and then they said no [...] So, I called back the company and said… hey what kind of glass do you use? Is it bio safe? Because it is the same glass that is used with the pet implants and they said well yeah but it's not meant for implant. It's an industrial thing… so I said okay. Thanks. Click. So immediately I went out and grabbed an ejector kit for pet assembly. I took the pet chip out, sterilized the tag I had, put it in there, and went to my doctor and had injected into my right hand [...] demo time. So, if the demo gods are smiling… So, this is a Windows 7 laptop and got a reader plugged into it and oohh there it is I thought oh gremlins. Anyway, so… yeah, it's very simple. Just do that, logs in (Graafstra, 2013).

Indeed, the "demo gods" were watching Amal's TEDx talk and smiling that day. But what about the other gods? Were they happy with all of this human-tech merging? For instance, would Zeus be in agreement with this Promethean journey? Certainly, the Greek god of thunder would have Amal punished for the hubris. What should be desired, required, known, and done in order to be positively sanctioned by an omnipotent, omniscient, and omnipresent deity, has been told and

[1] The term grinder is not a reference to the dating app Grindr.
[2] RFID stands for Radio Frequency Identification, which is as technology used work badges, for instance (Dangerous Things, 2020a).

retold throughout the ages. The archetypal message is clear: if you want to go to heaven, be devoted and behave well; if you want to enter Valhalla, be a brave warrior; or if you want to transcend and achieve Nirvana, be wise and in peace. Otherwise, you may end up staying with Hades and burning in hell, or being chained with Prometheus the titan[3], whose liver is eaten by an eagle each day for defying Zeus. In other words, if transcendence is the dreamed state, do not transgress (Belk et al., 1989; Douglas, 1984; Gaiman, 2017; Gellner, 1970; Greimas, 1992; Hamilton, 2017; Jenks, 2003; Lippens and Hardie-Bick, 2012).

Interestingly, however, humanity's fascination for achieving something beyond that which is given by an Almighty divinity can be found in many episodes since ancient times (Belk et al., 2020; Langton, 1996; Levy, 1992; Mayor, 2018; Sheehan and Sosna, 1991). Our quest for creation, extension, and controlling different forms of life, such as gods do, has been semiotically echoed through religions, myths, SCI-FI productions, and of course, science—from the magical creations of Homunculi, Pygmalion, Talos, Golem, Automata, and Frankenstein through to Neuromancer, Blade Runner 2049, Deus Ex, Brave New World, and Ghost in the Shell, and on to Siri, Sophia, and Smart Dust (MEMS). Several issues arise from this complex scenario, perhaps mainly because of the rebellious act of benevolence committed by Prometheus, the fire (technology)-bringer (Dougherty, 2006; Franssen, 2013; Hamilton, 2017). As portrayed in The Matrix movie, the Architect and Oracle who is the artificial intelligence (AI) that created the cyberpunk dystopian setting, can be seen as our nemesis for playing with fire. The point is, despite the eschatological scenario, as highlighted by Fuller (2011), Heidegger (1954/1977), Humayun and Belk (2020), Kozinets (2019a), and Schmitt (2019), it is undeniable that in many ways we are techno-dependent social beings, which means that sometimes we may feel the need and desire to play with our gifts, therefore, disobey. By "design", we are incomplete and need to rely on external tools to complete tasks that, otherwise, would be impossible to complete (Clark, 2004, 2007; Clarke, 1984; Franssen, 2013; Gorner, 2009; Heidegger, 1954/1977; More and Vita-More, 2013; Van Mazijk, 2019).

Accordingly, our pursuit to transcend a given condition should be seen as an intrinsic aspect of human existence. In alignment with Lacan (1992/2010), Sartre

[3] An offspring of the gods (Hamilton, 2017).

(1956/1978) posited that our existence is based on a perpetual state of lack, thus, our fundamental desire is the desire for being. Since, for some, "God is Dead" (Nietzsche, 1885/2006); who or what should decide the ontological condition of humanity? Why cannot a consumer desire become "more than human", since the condition of lack is a constitutive human element? Where is the boundary that separates transcendence from transgression in the search to fulfil that which is lacking? After all, to some extent, we are free (Sartre, 1957/1968, 1960/1976, 1985/1991). These are difficult questions to ask, however, the eliciting of unique answers is even harder, mainly in the Transhuman era, in which, entrepreneurs and consumers like Amal Graafstra are embracing emergent and speculative technologies[4] as a path to the so-called next stage of human evolution (Belk et al., 2020; Bostrom, 2005; Ferrando, 2019; Fuller, 2020; Lee, 2019; More and Vita-More, 2013; Ranisch and Sorgner, 2015). Consequently, in an attempt to summarize Amal's existential project, very much inspired by Sartre (1956/1978) and Propp (1928/1968), I wonder if: Instead of having the magical sword to defeat the dangerous monster and live happily ever after in the fairy tale, why not physically blend with the magical sword? Why should I have *to have* something external if I can internalize it *to do* what is needed and, thus, *to be*?

This would lead to the blurring of symbolic and physical boundaries between fiction and reality, human and non-human, gods and monsters. This could then have several implications, such as difficulties in maintaining our sense of self (Belk, 1988, 2013, 2019a), social relationships (Langcaster-James and Bentley, 2018; Wells, 2014), sense of humanness (Haslam and Loughnan, 2014; Sheehan and Sosna, 1991), bioethics (Belk, 2020; Koplin and Massie, 2020), and notion of sacredness and profanity (Belk et al., 1989; Douglas, 1984; Hrynkow, 2020; Noble, 1999). In this scenario, Amal's TEDx talk on merging with technology refers directly to the cyborg, as a machine-like human (Belk, 2017a; Clynes and Kline, 1960), who is no longer just a myth, fantasy, or fiction but a real living entity composed of flesh and metal (Barfield, 2015; Boss, 2020; Goudey and Bonnin, 2016; Kraftchick, 2015; Lum et al., 2014; Petersén, 2019). As humanity moves towards a hyper futuristic reality, hybridization and new forms of life might lead us

[4] The expression "emergent and speculative technology" refers to artificial intelligence, cryonics, microchips, nanotechnology, smart devices, among others.

to a totally new and unknown scenario, consequently, the demand for research efforts to explore this universe may arise (Belk, 2020, 2013, 2016a, 2016b; Dholakia and Firat, 2019; Letheren et al., 2020; Murphy et al., 2019; Xiao and Kumar, 2019).

Although prior studies investigated technology consumption grounded in different perspectives (e.g., Busca and Bertrandias, 2020; Giesler and Fischer, 2018; Hoffman and Novak, 2018; Novak and Hoffman, 2019; Priporas et al., 2017; Robinson and Arnould, 2019; Takhar and Houston, 2019; Tong et al., 2020), they mostly employed an Heideggerian approach, thus, viewed the technological device as only a tool (Heidegger, 1954/1977). In this scenario, the way that we have been experiencing these dissolving boundaries, the emerging changes in the human ontological status, and the consequences of doing so remain overlooked. Therefore, it is precisely due to the lack of knowledge about this type of human-technology symbiosis in consumer's life that my research questions are: *How do consumers experience their existence as cyborgs? Why do they become machine-like humans by choice?*

In agreement with Belk (2017a) and Belk and Sobh (2019, p. 5), without disregarding that "we all stand on the shoulders of giants and necessarily draw on concepts and insights from others", to answer my questions, I embraced an abductive logic given the novelty of the phenomenon (Peirce, 1935). Following Belk and Sobh's (2019, p. 3) suggestions not to rely on "ready-made theories off the shelf" the aim was to delve deeper and provide original contributions to consumer research. Therefore, I was first driven by the phenomenon and the constant questioning "What is this a case of?" This first stage led me to profoundly immerse in the rather puzzling grinding context (e.g., types of procedures, functions of devices, technological jargon), which included, literally, my tears, sweat, and blood, to understand Amal Graafstra's grinder-type of cyborgization as a consumption phenomenon. Secondly, by combining grounded theory and abductive reasoning about the phenomenon and the data (e.g., Instagram posts, interviews), I have contrasted several possible interpretations for the human-tech merger relying on, for instance: Discursive Identity (Charaudeau and Maingueneau, 2002), as if it is solely based on a major enunciator's discursive strategy of manipulation; Entanglement Theory (Hodder, 2016; Hodder and Lucas, 2017) and its proposal for human-things positive and negative types of connections; and Archetypes and the

Collective Unconscious (Jung, 1956, 1959a, 1969a, 1969b, 1973), assuming the cyborgization process as a semiotic echo resonating from the dawn of the collective unconscious.

During the third and final stage, I realized that this new phenomenon demanded a new framework to be analyzed, which led me to choose the Extended Self theory (Belk, 1988, 2013, 2015a), with its existential-phenomenological roots (Sartre, 1956/1978), as a starting point. This choice is justified by two reasons: first, by the abovementioned theoretical approaches which overlook the volitional ontological changes in the human condition by merging with technology; second, how the former Extended Self's (Belk, 1988) propositions do not account for the incorporative aspect of consumption, and, as stressed by Belk (2014a, p. 5), the human-tech symbiosis phenomenon "has the potential to *invert the notion* of extended self, transforming it into the *incorporative self*." This statement, as well as more contemporary writings on the matter (e.g., Belk, 2018a), opened the opportunity to modify or even to create an original concept as an alternative. Therefore, in a transcendent act of transgression, instead of trying to realize the potential inversion, my theorization is based on the notion of interaction, nominated the Interactive Self. Since my interest is centered on cyborgs as a volitional new ontological condition, I draw on the Transhumanism approach which envisions human enhancement as having cybernetic body parts (e.g., Ferrando, 2019; More and Vita-More, 2013; Ranisch and Sorgner, 2015), cyborg anthropology, specific literature related to real-life machine-like humans (e.g., Belk, 2017a; Clark, 2004; Hables-Gray et al., 1995; Haraway, 1985), and Belk's writings on the self. This alternative proposal is grounded in Sartre's latter works on existentialism, which consider the dialectical dynamics of human and non-humans in the constitution of a particular reality (Sartre, 1957/1968, 1960/1976, 1985/1991).

Forging ahead, I developed my insights and theorization based on a prolonged and intensive immersion into the grinding context that began in 2017 with a netnography on several online platforms (Kozinets, 2019b). Then, as further explained in the Methods and Context sections, an ethnographic fieldwork (Belk et al., 2013; Fetterman, 2010) was conducted by attending several conferences, meetups, seminars, and visits to tattoos & piercings studios in Brazil and Canada. It is worth mentioning that these two methodological steps were fundamental to the

contextualization of the grinding scene and helped me to start "feeling what was going on there". Given my philosophical framing, I started to do phenomenological interviews (Polkinghorne, 1989; Smith et al., 2009) with different profiles of consumers of RFID/NFC[5] microchips to capture their lived experience on being cyborgs. Finally, as abovementioned, my relationship with both this research and the grinding scene became "skin deep" quite literally, to the point of initiating an autoethnography on becoming a machine-like human (Denzin, 2014, 2016). As a result, I am now composed of flesh and metal or, if I may say, ACGT and 010101[6] due to the NFC microchip implanted in my left hand. Regarding the data analysis process, I followed the French Semiotics postulates, specifically taking into account the existential-phenomenological turn in the Parisian School of Semiotics since the 1980s. That is, I paid attention not only to the intelligible but also to the sensitive aspects of the phenomenon and data (Floch, 1988, 2000, 2001; Greimas, 1987a; Landowski, 2005, 2015; Pessôa, 2011; Semprini, 1992; Tarasti, 2015).

As a result of this inquiry, my theoretical claim is: *We, as cyborgs, are not only the sum of our insideable technologies, such as microchips, but also the sum of our interactions with external digital devices in order to exchange data over time*. That is, the Interactive Self is sustained by the process of the externalization of the internal and the internalization of the external in dialectical and perpetual dynamics. To support this argument and answer the research questions, my presentation of the concept is two-fold. First, to answer my *how* question, I describe the conceptual components of the Interactive Self, considering the eternal process of being a cyborg by means of NFC microchip consumption. Next, to specifically answer my question on *why* consumers have been doing it, I promote an articulation of Sartre's modes of existence (Sartre, 1956/1978, 1957/1968, 1960/1976, 1985/1991) within the aspect of volitional cyborgization, which places humanity one step closer to its ancient dream of performing god-like miracles (Belk et al., 2020; Belk, 2017a; Davis, 2004; Gell, 2008; Mayor, 2018; Noble, 1999).

In doing so, I engaged in answering recent calls for studies made by Belk (2020), Belk et al. (2020), Dholakia and Firat (2019), Geiger and Gross (2017),

[5] NFC stands for Near Field Communications and is a subset of the RFID technology (Dangerous Things, 2020a).
[6] 01 represents the binary code of computers and ACGT (adenine, cytosine, guanine, thymine) is the basic chain of the DNA.

Kozinets (2019a), Le Dévédec (2019), Schmitt (2019), and Takhar et al. (2019) on emerging and speculative technology consumption by providing a novel conceptualization of the cyborg's existential condition. Furthermore, my doctoral research contributes to discussions on technology consumption, identity projects, and bioethics in consumer research within the context of Transhumanism.

1.1. Summary of the chapter

In this chapter, I presented the exploration of the phenomenon that sparked my interest for the purposes of this doctoral research: Being a cyborg. First, I developed my introduction by promoting the connection of one of humanity's ancient dreams (i.e., to be able to perform god-like acts) with myths, religions, and SCI-FI productions, and in so doing, portray our dependency on technology. This was followed by questions about our freedom *to have, to do*, and *to be*, within the context of the human ontological condition and the boundaries that circumscribe human agency. Given our movement towards a hyper futuristic reality, I tailored my research questions to investigate the reasons and outcomes of becoming or being "more than humans" in the transhumanist era. At this point, the lack of knowledge about the cyborgization phenomenon in consumer research was highlighted.

Then, in this chapter, I briefly introduced my abductive process of theorization as a possible explanation for the Interactive Self, since the revised theoretical approaches would not suffice to explain the human ontological changing by merging with technology. My argumentation, as shown, was theoretically backed by Transhumanism, cyborgs, and the Extended Self approaches, within an existential-phenomenological frame. Finally, I suggested potential contributions to technology consumption, identity studies, and bioethics within the context of Transhumanism for consumer research.

2.
Chapter: Theoretical background

2.1.
A transhumanist search for transcendence

According to Greek mythology, in an apparent act of benevolence, Prometheus, the creator of humanity, stole the fire belonging to Zeus and gave it to humans so we could transcend our condition (Dougherty, 2006; Hamilton, 2017; Mayor, 2018). Similarly, in the movie The Matrix, Morpheus offered Neo a chance to "wake up" and see the technological-driven world as it was, so he could transcend his supposedly biological and limited human condition. Regardless of their intentions, both Prometheus and Morpheus enacted their protective roles by saving humankind from darkness, and therefore, we can say that they should be praised. In this chapter, I outline the main characteristics of Transhumanism not only as a technoprogressive socio-political movement but also as an aggregate of philosophical schools of thought that have an influence on our current period in humanity's history with its gods, titans, and saviors.

2.1.1.
Unboxing the gift from Prometheus

In the emblematic dystopian scenario portrayed in the Brave New World novel by Huxley (1932/2010), humans are made in laboratories in a process similar to in-vitro fertilization (IVF) and genetic engineering, so the constitution of a "better society" can be achieved. These bio-engineered human beings can be seen as a manifestation of our extreme fear of disorder, uncertainty, and randomness, which could lead us to complete chaos and apocalyptical scenarios, such as being enslaved by a strong AI[7] (Agar, 2014; Bostrom, 2005; Davis, 2004; Fukuyama, 1992; Koplin and Massie, 2020; Miah, 2017; Wiener, 1963/2019). In almost every dystopian setting, there is the presence of a strict system of hierarchies, functions,

[7] Strong AI has the capacity of self-awareness, consciousness, thinking, and decision making without human input (Scerri and Grech, 2020).

beliefs, and prohibitions, supposedly suppressing spontaneity, unpredictability, and accidents (Llosa, 1991).

Depicted and sometimes perceived as a nightmare in heaven, these contexts often explored in Western culture have moral and bioethical issues as common features, nurturing both our despairing yet hopeful thoughts about the techno-driven future (Allhoff et al., 2010; Belk, 2020; Fukuyama, 2002; Habermas, 2003; Porter, 2017; Winfield and Jirotka, 2018). Possibly, one of the most remarkable examples of humanity's quest for mastering life is Mary Shelley's classic novel Frankenstein; or, the Modern Prometheus (Shelley, 1818/2012). Although at first, Victor Frankenstein had noble intentions of eliminating diseases and suffering, he, however, engaged in a destructive attempt to give birth to a human being through his experiments. Composed of body parts collected from charnel houses, graves, and morgues, Victor's creature was seen as socially unacceptable, given its grotesque nature. Rejected by society and betrayed by his creator, the unnamed being decided to take revenge on Victor's family for all the offence and agony he had suffered. Is there a moral lesson to be learned from this careless pursuit of scientific achievements (Koplin and Massie, 2020)? Is it a warning to be cautious with the unknown and not "play God" (Peters, 2018)? Like the fire of Prometheus which can illuminate the darkness as well as incinerate life on earth, technology has a fascinating and complex nature of contrarieties, contradictions, and complementarities which we should take into consideration if we are to remain alive and preserve the wellbeing of humanity (Kozinets, 2008; Kozinets et al., 2004; Kurzweil, 2006; Lima and Pessôa, 2018; Manzocco, 2019; Mick and Fournier, 1998).

It is practically inevitable that humans will be afraid of a non-human takeover, given our modern pop and technological Western culture, as represented in The Matrix movie (Ammi, 2019; Boettke, 2003; Bostrom, 2001; Fukuyama, 2002; Fuller, 2018; Geraci, 2010). Nevertheless, what if the emergent and speculative technology, such as AI, nanotechnology, cryonics, microchips, among others, could in fact help us to cure diseases and eliminate suffering? Furthermore, what if we can really achieve humanity's long-dreamed of radical life-extension or even immortality, as pursued by the alchemists (Baigent and Leigh, 2005; Belk, 2017a; George, 2003; Guiley, 2006)? Throughout our history, the quest to transcend the confines of our human nature and become more god-like humans comes up against

an indubitable fuzzy boundary between sacredness and profanity, magic and technology, religion and science, which can be seen in timeless semiotic echoes manifested in myths and consumer narratives (Belk, 2020; Belk et al., 2020; De Miguel Beriain, 2019; Hughes, 2012; Lima et al., [s.d.]).

Setting aside technophobic and eschatological circumstances, but not neglecting them (Fukuyama, 1992; Koplin and Massie, 2020), answers for these and other philosophical questions may be at the heart of the technoprogressive socio-political and the aggregate of philosophical schools of thought known as Transhumanism. Considered as one of the creators of the movement, Julian Huxley[8] stated that the present moment of our history is based on the idea that:

> "The human species can, if it wishes, transcend itself […]. We need a name for this new belief. Perhaps transhumanism will serve: man remaining man [sic], but transcending himself, by realizing new possibilities of and for his human nature" (Huxley, 1957, p. 17).

While there is no consensus about an integrative view of it (Ferrando, 2019; Fuller, 2020; Grant, 2019; Lee, 2019; Ranisch and Sorgner, 2015; Wennemann, 2016), Transhumanism proposes that we, as *Homo Sapiens*, are not at our final potential in terms of evolution and, by this belief, humanity should embrace technology not as a mere tool to an end, as in Heidegger's (1954/1977) instrumental view on the matter, but as a natural constituent of our ontological condition. To greatly enhance human existence, science and technology should replace chance with choice and randomness with control. For a more holistic perspective of Transhumanist goals, Table 1 summarizes the Transhumanist Declaration, originally crafted in 1998 and updated in 2009 by many leading scholars and philosophers (e.g., Baily et al., 2009; Doyle, 2018; Hansell and Grassie, 2011; Hughes, 2004; Lee, 2019; More and Vita-More, 2013).

[8] Julian Huxley, brother of The Brave New World novel's author, Aldous Huxley, was an English evolutionary biologist and fundamentally humanist who was the first General Director of UNESCO and founder of the World Wildlife Fund (Cordeiro, 2014).

Principle	Description
1	Humanity stands to be profoundly affected by science and technology in the future. We envision the possibility of broadening human potential by overcoming aging, cognitive shortcomings, involuntary suffering, and our confinement to planet Earth.
2	We believe that humanity's potential is still mostly unrealized. There are possible scenarios that lead to wonderful and exceedingly worthwhile enhanced human conditions.
3	We recognize that humanity faces serious risks, especially from the misuse of new technologies. There are possible realistic scenarios that lead to the loss of most, or even all, of what we hold valuable. Some of these scenarios are drastic, others are subtle. Although all progress is change, not all change is progress.
4	Research effort needs to be invested into understanding these prospects. We need to carefully deliberate how best to reduce risks and expedite beneficial applications. We also need forums where people can constructively discuss what should be done, and a social order where responsible decisions can be implemented.
5	Reduction of existential risks, and development of means for the preservation of life and health, the alleviation of grave suffering, and the improvement of human foresight and wisdom should be pursued as urgent priorities, and heavily funded.
6	Policy making ought to be guided by responsible and inclusive moral vision, taking seriously both opportunities and risks, respecting autonomy and individual rights, and showing solidarity with and concern for the interests and dignity of all people around the globe. We must also consider our moral responsibilities towards generations that will exist in the future.
7	We advocate the well-being of all sentience, including humans, non-human animals, and any future artificial intellects, modified life forms, or other intelligences to which technological and scientific advance may give rise.
8	We favor allowing individuals wide personal choice over how they enable their lives. This includes use of techniques that may be developed to assist memory, concentration, and mental energy; life extension therapies; reproductive choice technologies; cryonics procedures; and many other possible human modification and enhancement technologies.

Table 1 – Transhumanist Declaration.
Source: Baily et al. (2009).

Following these principles, humanity ought to thoroughly pursue Huxley's (1957) proposed human transcendence not only by exploring and mastering the known knowns and known unknowns but also unknown unknowns (Rumsfeld, 2002). During this perpetual and cyclical onto-epistemological process, we must have faith that something new can always be discovered and become a fact, so that knowledge can keep evolving (Denzin and Lincoln, 2018; Ferrando, 2013; Fuller, 2015; Remedios et al., 2016). Even though sounding contradictory, scientific philosophies share some characteristics with religious ideologies, such as axioms on what can and cannot be truth or falsity (e.g., a soul), supernatural or real (e.g.,

afterlife), miracle or trick (e.g., a weeping statue) (Evans, 2013; Franssen, 2013; Hirschman, 1986; Hrynkow, 2020; Lakatos, 1976; Mercer and Trothen, 2015; Noble, 1999; Wagner and Berger, 1985).

In this technophilic world, I propose an articulation of the four main schools of thought (Ferrando, 2019) based on degrees of freedom and collectivity propelled by their perpetual and cyclical onto-epistemological process (Denzin and Lincoln, 2018; Ferrando, 2013). Figure 1 depicts the proposal.

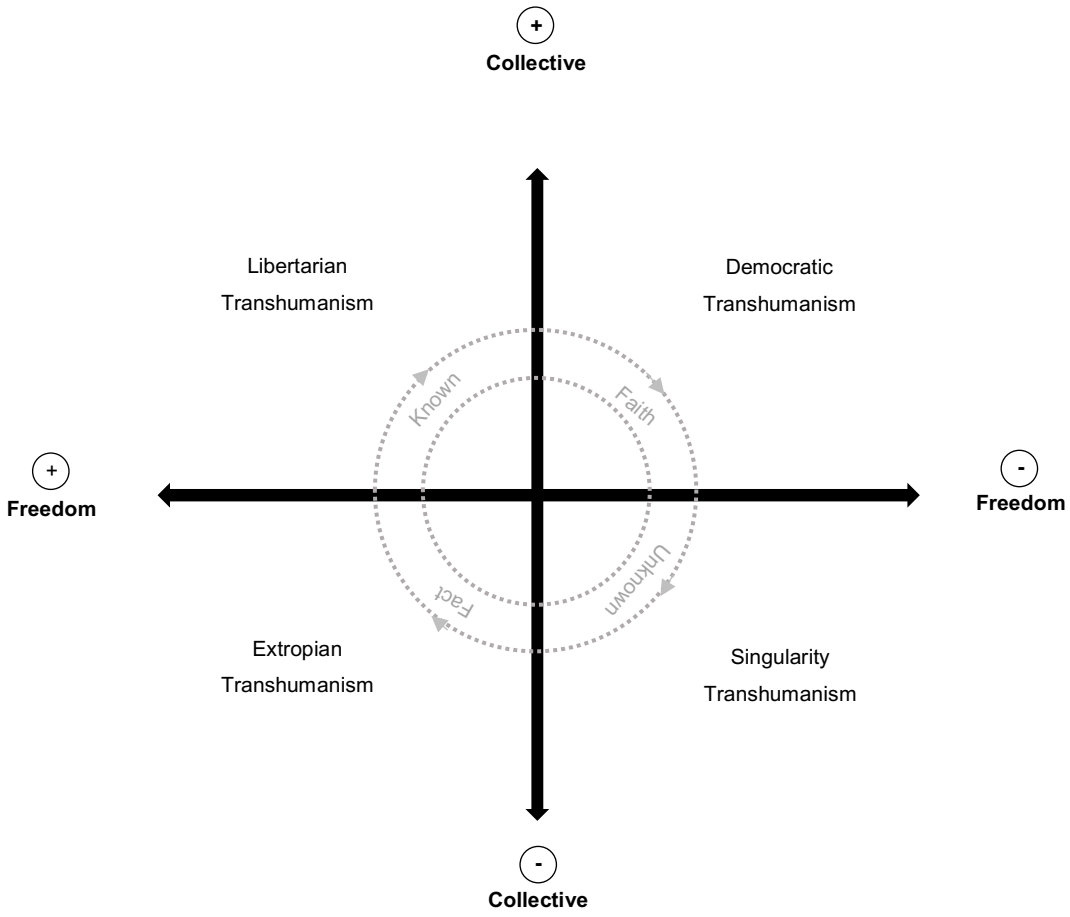

Figure 1 – Transhumanism's schools of thought.
Source: Elaborated by the author.

From a more collective experience of the promises and perils of enhancement, the Libertarian Transhumanism ideals are grounded in the constitution of free markets to secure the right to human enhancement no matter what the circumstance (Bailey, 2005; De Melo-Martín, 2010; Ferrando, 2013; Hughes, 2012). One of the most prominent voices within this current of thought is Zoltan Istvan, who is a

candidate for the United States vice-presidential election in 2020 and has been raising awareness for transhumanist political subjects (Istvan, 2020).

In this context, occasionally and contradictorily, inspired by anarcho-capitalists theorists (e.g., Friedman, 1989) and financially supported by Silicon Valley millionaires (e.g., Rushkoff, 2018), it is argued that the transhumanist policy agenda must be in opposition to any regulation on the quest for the unknown unknowns, to conceive enhanced human beings (Bradshaw and Ter Meulen, 2010; Sandberg, 2017). From this hubristic perspective and its consequences, such as the chaining of Prometheus to a rock or the possible annihilation by the Source, the Matrix's *Deus Ex Machina*[9], seems not to be an issue. The primary narrative here is to defy, to do, and consequently, to be. Taking a different approach, but still altruistic-based, Democratic Transhumanism proposes the right to and equality in accessing resources for technological enhancements in order to eradicate suffering in all sentient life (Pearce, 1995). In their view, this must be taken as the ultimate objective since this new context could generate even more economical, social, sexual, racial, and political asymmetries among others (Ferrando, 2020b; Hughes, 2004; LaGrandeur and Hughes, 2017; Pearce, 2012; Rikowski and Ford, 2019). This transhumanist school of thought urges to find a feasible, balanced, and fair solution by means of institutionalized-driven technological progression (Garner, 2005; Hughes, 2019; Le Dévédec, 2018; Mazarakis, 2017; Thompson, 2017a). The challenge, hence, is to avoid the dystopian narrative described in the novel Brave New World, and repeated historical atrocities, such as the Nazi eugenics experiments during WWII (Fuller and Lipińska, 2014; Habermas, 2003; Hicks, 2010; Koch, 2010; Long, 2017; Ranisch, 2019; Sorgner, 2008). Even though some may try to point to a "positive eugenics" (Tirosh-Samuelson, 2012b), history shows us that there is nothing positive in eugenics, as racism, discrimination, and genocide seem to go hand in hand.

Moving the discussion to a more individual level of experiencing the freedom to transcend, the Singularity Transhumanism has its best representation by the scene in The Matrix movie when Neo has a numinous experience (Jung, 1973) during a fight and merged with the physical world controlled by the Source. This irreversible

[9] In Latin, refers to “god from the machine”, which is, originally in Greek drama, a person or thing that appears in a situation to provide an artificial or contrived solution to an apparently insoluble issue (Appleton, 1920).

turning point, of an exponential development of technology being able to develop by itself, can in fact be seen as the ultimate *telos* of our transformational process to transcend to another ontological structure of beings (Belk, 2018c; Berkowitz, 2018; Featherstone, 1996; Livingston and Risse, 2019; Moravec, 2000). Singularity transhumanists have an explicit faith that we will become literally one with technology in the near future, as in the case of Neuralink's first product for the brain-machine interface, which is an implant in the human brain to merge with AI (Brown et al., 2019; Kirsch et al., 2019; Kurzweil, 1999, 2006; Musk, 2019). At this point, it is expected that machines will not only help humans to become more god-like but also supersede their creators, which, from a dysphoric perspective, could lead to the creation of a place for the privileged and another place for the exploited. This possible scenario is depicted in the Altered Carbon cyberpunk Netflix's series, in which the *Aerium*, an area located above the clouds, is reserved for wealthy and techno-enhanced human beings to live in. From there, the residents cannot see what happens in the techno-driven and collapsed world that is underneath the clouds—if the god-like humans live above the clouds, the demon-like humans are below them. As to the last school of thought, the Extropian Transhumanism will be detailed separately in the next section since it is fundamental to my arguments and theorization process.

2.1.2.
Choosing the red pill: the Extropian Transhumanism

If Libertarian and Democratic Transhumanism could be romanticized and seen as a form of altruistic and ideal Christian agapic love, given their social and collective agenda, we could then observe Singularity and, above all, Extropian Transhumanism as forms of erotic love. We may find agapic-like narratives about sacrifice and bleeding for the other, as shown in the Netflix series' Unnatural Selection[10], but the Extropianism, with its individual and self-transformational nature, has an erotic *ethos* in which the purpose is to acquire and possess and not necessarily to give (Belk and Coon, 1993; Brown, 1998; Campbell, 2018; Ferrando,

[10] It is a Netflix series of four episodes about genetic engineering, CRISPR, biohacking, transhumanism, and cyborgization, from the scientific, governmental, business, and biohackers perspectives.

2013, 2019; Nygren, 1989; Soble, 1989). The erotic-inspired narrative may be exemplified by the life and death of Aaron Traywick, the young Ascendance Biomedical CEO who was a polemical and unorthodox figure, even for some transhumanists. Traywick was always talking about developing new drugs to cure herpes, cancer, and HIV to help humanity, but, at the same time, would lose his composure whenever he realized that fame, money, and success were not moving at the same pace as his desires. Sadly, in 2018, his body was found floating in a sensory deprivation tank, which led some people to believe it was suicide while others did not agree.

Since the 1990s, Max More, a leading voice of Extropian Transhumanism, has been advocating for us to follow the white rabbit and take the red pill, a metaphor for scientific and reasoned thinking, in order to achieve the next stage of our existence, since all of us should seek to transcend any confinement (Bostrom, 2005; Cohen and Spector, 2019; Ferrando, 2019; More, 1990, 2010; Vita-More, 2019). Initially with the aim of attaining immortality, more recently discursively reframed as radical life extension (Grey and Rae, 2007; Kostick et al., 2019; Thompson, 2017a), this type of Transhumanism is not always seen as an ethical or sacred approach (Hrynkow, 2020; Martens, 2019; Obioha, 2013; Thweatt-Bates, 2016). Inspired by its anarcho-capitalist origins (More, 1990), Extropianism advocates non-interference by states, given their roles in low rate scientific progress. Furthermore, from a religious perspective, extremists constantly harass and assault those defiant of gods' plans (Hughes, 2012).

Extropists have been exerting their freedom in the quest for the known unknowns and unknown unknowns based on the set of ideals named The Extropian Principles written by Max More in 1998 but later updated. In its latest publication, named The Extropist Manifesto, it states that the Extropian philosophy can be summarized in five statements, as shown in Table 2.

Principle	Description
Endless eXtension	Extropists seek perpetual growth and progress in all aspects of human endeavor. We are, as a species and as a culture, never finished or in any essential way complete. Instead, we continually pursue knowledge, we constantly experiment, we forever continue to develop techniques that improve our minds, our bodies, our culture and our environment. Extropists affirm this belief and take it to its logical conclusion. We desire the technology and understanding that allows us to continually transform and augment the human body until we attain radically expanded lifespans, super-human wisdom & physical/neurological powers beyond anything we can imagine today. We intend to improve our culture & environment until we've instituted a fluid society that guarantees a euphoric existence to all those who desire it. We believe that there are sufficient resources available on Earth, in the solar system, and in the cosmos, to maintain endless growth and advancement.
Transcending Restrictions	Since they are ultimately inspired by growth, progress and continual development, Extropists wish to abolish all restrictions imposed by religion, protectionism, segregation, racism, bigotry, sexism, ageism, and any of the other archaic fears and hatreds that continue to limit us today. We seek freedom for all living creatures, and we believe that all of humanity can work together - without limits - in joyful social relationships that are based on honest communication and empathetic kindness. We oppose authoritarian laws, surveillance and social control. We favor freedom of speech, freedom of action and freedom of experimentation in our constant striving to transcend all limitations to human potential. We also desire the ability to direct human evolution; to rise above our present animalistic behavior of conflict and domination and to abandon all physically and psychologically unhealthy inherited traits. Using genetic therapy and technical augmentations we will be able to create more advanced minds living in healthier human bodies. We will be able to remove neurological, physical and mental diseases that have plagued humanity since time immemorial. Ultimately, we want life and the way that we live it to be a conscious choice that isn't limited by a sudden onset of disease or genetically programmed death.
Overcoming Property	We wish to reform archaic, outdated human laws that govern possession by improving and/or annihilating terms such as ownership, copyright, patent, money and property. We believe that present regulations promote greed and are ultimately destructive to a far larger degree than they are beneficial. Millions of people are dying every year because pharmaceutical companies are unwilling to share their discoveries and insist on selling their products at murderous, unconscionable prices. The movie and music industries are successfully alienating their own customers by going after people who share files with each other on the Internet. We believe it is madness that anyone can own an idea, a blueprint, a thought, a melody or a genome. Human progress will advance far faster if knowledge, culture and resources are shared by everyone for the general welfare of all Earth's inhabitants.

Intelligence	Extropy is the opposite of entropy; it is the inverse of chaos and lethargy. In a way, it is the only exception to the Second Law of Thermodynamics. Extropy is intelligence, creativity, order, critical thinking, ingenuity and boundless energy. The most valuable material in the universe is information and the imagination to do something with it; with these two qualities there is truly no limit to what can be accomplished. We believe in optimism, independent thinking, personal responsibility, self-direction, self-esteem, critical thinking and respect for others. We do not believe in doing things because that's how they've always been done, we believe in rational thought; utilizing our deductive reasoning abilities instead of depending on blind, irrational faith, superstition and traditional dogma.
Smart Machines	A primary goal of Extropianism is the attainment of Friendly Artificial Intelligence. We promote the development of robots, computers, and all machines that can emulate human thought, copy minds, and attain intelligence that exceeds human ability. We fully endorse the ambitious projects ongoing in the world today where robots are being built to facilitate in everything from the care of the elderly to the building of better machines. In this respect, Extropists are Singularitians. We believe that once Intelligent AI has been developed, many of the other Extropist goals will follow naturally and in short order. We support all funding for research that promotes this ambition, and we oppose all legislation that impedes progress towards this intention.

Table 2 - The Extropist Manifesto.
Source: Humanity+ (2010).

For some scholars and philosophers, their manifesto is much closer to a Hollywoodian cyberpunk plot rather than a feasible reality, or even to a new religion in which technology and/or the human being replaces god's seat in the temple of worship (Brown, 2010; Donaldson et al., 2018; Gallaher, 2019; Hauskeller, 2015). The religious-transhumanist syncretism is interestingly entangled in Max More's writings (e.g., More, 1990) and elsewhere (e.g., Mormon Transhumanist Association, Christian Transhumanist Association, Buddhist Transhumanism, Raëlism, The First Church of the Singularity, Church of Perpetual Life, Church of Virus). At the same time as acknowledging the positive and necessary role of religions in providing meaning and ontological security for humanity, More (1990, 2010, 2013) raises several questions and challenges to religious axioms, to a large extent based on the legacy that the Enlightenment left to the transhumanist thinking.

Despite the similar ideas shared by Transhumanism's schools of thought (Bostrom, 2005; Ferrando, 2019, 2020b; Hughes, 2010; Kyslan, 2019; Lee, 2019; Sorgner, 2008; Tirosh-Samuelson, 2012a), the Enlightenment's ideal of progress is accentuated more within the Extropian perspective. Although Humanism is taken as the starting point for all transhumanist philosophy, these two approaches cannot be regarded as the same, as claimed by More (1998): "Transhumanism differs from Humanism in recognizing and anticipating the radical alterations in the nature and possibilities of our lives resulting from various sciences and technologies." In other words, their main difference lies in the ontological role and the endorsement of technology for the purpose of providing transcendence possibility for all living creatures. By further advancing humanist's values, it can be regarded as a "ultra-humanism", leading humans to become "more than humans" (Driollet De Vedoya, 2016; Ferrando, 2019; Lipowicz, 2019; Onishi, 2011). Furthermore, if one considers Transhumanism as a stage of transition to Posthumanism (Cordeiro, 2019), it can be said that the heavily criticized Humanism's ontological hierarchy (Haraway, 1985), loses its strength. In this sense, the anthropocentric view of the world, the human/animal dichotomy, or even "the animality *of* the human," as Wolfe (2018, p. 357) mentions, can no longer be used as a discursive mechanism for the segregation of any form of life.

As shown quite explicitly in The Extropist Manifesto, in order to achieve the desired condition in this quasi-hyperbolic version of Transhumanism, humanity must specifically embrace morphological freedom. Accordingly, much of the argument on the freedom to change our own existential condition is based on the reading of the civil right to be free, so no one shall engage in any unwanted activity (e.g., to be forbidden to have an AI-based brain implant), regardless of its origins—from government or any other institution (Machan, 1986; More, 1993, 1998; More and Vita-More, 2013; United Nations, 1948). As explained by Sandberg (2017, p. 6):

> Morphological freedom as a right can be seen as a consequence of the right to one's body combined with the right to liberty (where the right to one's body follows from the right to one's life). In order to flourish as humans, we need others to respect our bodies, but also respect our freedom of action. Some of these actions in a biotechnologically advanced society will involve modifying our bodies, and hence the more fundamental rights imply morphological freedom.

By the time that Neo chose to take the red pill and go all the way down the rabbit hole, the ritual to become more than his previous version started, with some sacredness elements, such as mystery, ecstasy, and flow (Belk et al., 1989; Boettke, 2003; Hancock, 2016). At the end of the journey, he emerged as a new being, part machine part human, a hybrid, a transhuman as in the utmost Extropian desire. The idea and the figure of a superhuman can be traced back to Nietzsche's (1885/2006) *Übermensch* or Overhuman[11], one of the major influences on the transhumanist philosophy (Fuller, 2020; Lipowicz, 2019; Merlo, 2019; More, 2010; Sorgner, 2008; Tuncel, 2017). An Overhuman, as described by the prophetic figure Zarathustra (Nietzsche, 1885/2006), is the person who is willing to risk everything in the name of humanity's progress.

An Overhuman is someone who has a life which is not purely to live each day without no meanings, mainly because, as Jung (1959) puts, "Man [sic] cannot stand a meaningless life". In its place, above all, Overhumans must perpetually create their own values and seek transcendence. Since "God is dead," there is nothing left upon which to structure their beliefs and values (Fuller, 2020; Merlo, 2019; Nietzsche, 1885/2006; Sorgner, 2008). On the same matter, but from another perspective, Bostrom (2005), for instance, suggested that the philosophical roots of Transhumanism are in Kant (1986) and his writings about rationality, critical thinking, and progress.

Although it is a prolific discussion, I have no intention in this thesis of solving any contradictions, divergences, or trace the paths, corners, and turns of this philosophy. Instead, my intention is to offer another and less explored perspective on the topic, one that is based on the Sartrean existential-phenomenological approach, in order to discuss the freedom *to be*, *to have*, and *to do* so that the desired transcendence can be achieved. But before promoting an articulation with Sartre's contribution to Extropianism and consumer research, I will present what or who could be taken as a Promethean creature, a transhumanist being that has its(?) ontological condition positioned between human and machine, just like Neo with his headjack.

[11] Following Sorgner's (2008) adaptations, I am using the term Overhuman instead of Overman or Superman since, in German, the term *Übermensch* can be used to both sexes.

2.2.
A transhumanist being: the cyborg

Did Prometheus give the fire to humans because of his altruism or greed? The fire, before becoming our gift, belonged to Zeus who had it stolen by being tricked (Dougherty, 2006; Hamilton, 2017). The line that separates the titan's agapic love from the erotic (Belk and Coon, 1993; Brown, 1998; Campbell, 2018; Soble, 1989) is as fuzzy as the boundary that divides humans and machines in the transhumanist era (Belk, 2014a; Fuller, 2011; Lee, 2019; Lima et al., [s.d.]; Sheehan and Sosna, 1991). In this context, my arguments in this section are informed by the view of the cyborg as a complex manifestation of our lived experience of technology consumption, sometimes seen as miraculous and sacred as well as heretical and profane (Belk et al., 2020; Belk, 2016a, 2017a, 2018c; Davis, 2004; Hrynkow, 2020; Noble, 1999).

2.2.1.
Using the gift from Prometheus

In The Matrix movie, like Morpheus, different from his crewmates, Tank the operator on board the *Nebuchadnezzar* hovercraft was biologically conceived and born in the real world, in Zion, the last human city. Proud of his origins, he talks to Neo about his body and the absence of jacks and connections produced by the hybrids which artificially cultivate parts in the Machine's humans harvest arenas. With this scene in mind, would Tank agree with Habermas' (2003) critics on the "grown" and "made" and the future of humanity[12]? Impossible to confirm although plausible given the portrayed storyline. In this narrative, what separates humans from non-humans is, first, the method of creation, second, the place of birth, third, organic/inorganic parts, and fourth, self-consciousness. Inspired by Tank's statements, the ontological condition of different entities can be articulated in a semiotic square by having humans and machines as the primary opposition

[12] As Habermas (2003, p. 53-54) stated "might usher in the vertiginous awareness that, as a consequence of a genetic intervention carried out before we were born, the subjective nature we experience as being something we cannot dispose over is actually the result of an instrumentalization of a part of our nature. The realization that our hereditary factors were, in a past before our past, subjected to programming, confronts us on an existential level, so to speak, with the expectation that we subordinate our being a body to our having a body."

(Greimas, 1983a). In this sense, aiming at the proper signification of these semantic components, the human and the machine axes must be understood as *ad hoc* universal semiotic categories, such as nature/culture and life/death (Greimas and Courtes, 1982, p. 361). Figure 2 illustrates the proposal.

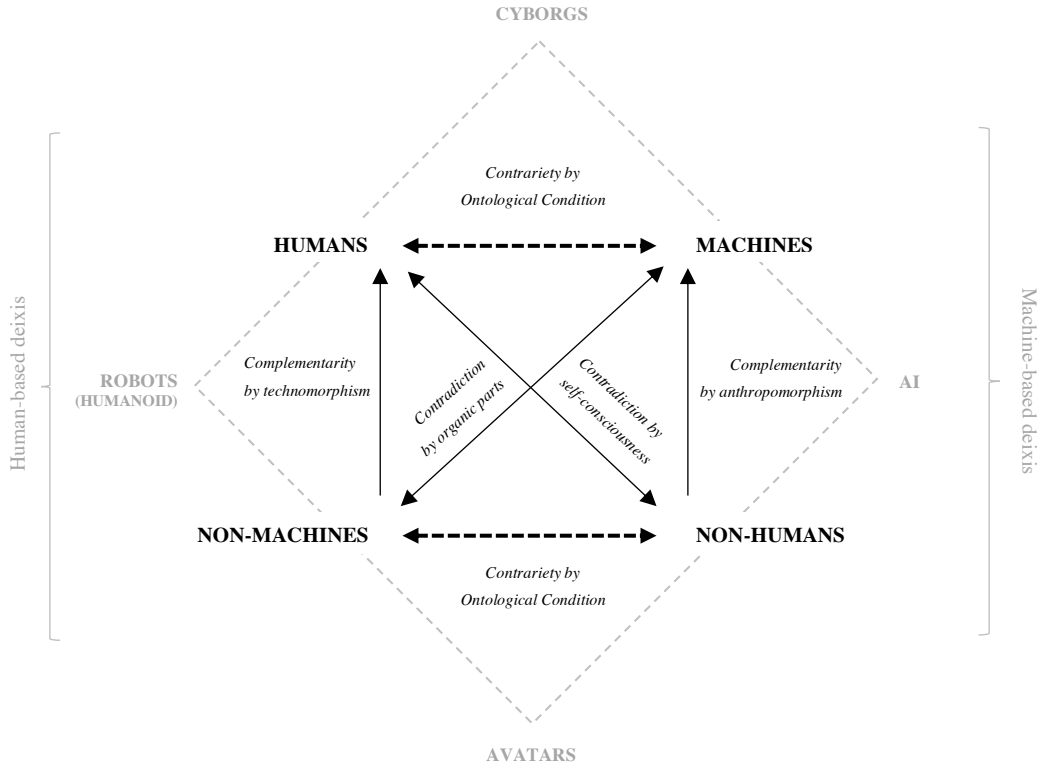

Figure 2 - Semiotic square for humans and machines' ontological conditions.
Source: Elaborated by the author.

According to Haslam (2006), Haslam and Loughnan (2014), Castelo et al. (2019), humans can be regarded as possessors of a set of attributes, such as emotional responsiveness, interpersonal warmth, cognitive openness, agency, and subjectivity. On the other hand, machines are inert, cold, rigid, passive, and superficial. Recalling Tank's lines in the movie, humans are basically conceived through a process of sperm transportation, egg transportation, fertilization, embryo development, implantation, and then birth, almost like a hierophanic event (Health, [s.d.]; Van Blerkom et al., 1995). Machines are heartless and soulless, assembled in factories and laboratories for a given task, representing our path towards a collapsing society and the degradation of humanity's sacred condition (Donaldson et al., 2018; Haslam, 2006; Hauskeller, 2016; Hrynkow, 2020). In this scenario, our

Western cultural framing helps us in the identifying and eventual understanding of alterity, that can be taken as a foundation of the process of identity building (Askegaard et al., 2005; Greimas, 1987b; Landowski, 1997; Thompson and Tambyah, 1999). In other words, as shown in the aforementioned semiotic square, it is clear that the human is a person (i.e., the "I") and the machine a computer, for example, (i.e., the "Other") based on their ontological condition and semantic position.

As a result of the transhumanist era, the relation between humans and machines is less clear on the other semantic axes, since it is not easy to determine where or when one begins and/or ends. Unquestionably, a problem that arises in this context relates to the undefined ontological place of who or what is not the "I" and the "Other", leading us to possible states of repugnance, fear, fascination, and contemplation, on occasion all at the same time (DeBaets, 2014; Doyle, 2018; Joy and Li, 2012; Kozinets, 2008; Porter, 2017).

On observing the proposed semiotic square, I wonder: Should we buy an AI-based app, such as Replika, that emulates our beloved dead ones and then purchase a robotic body, as portrayed in the series Black Mirror in the episode Be Right Back? Is Shudu, a gorgeous 3-D digital animation with almost 200,000 followers on Instagram, a real digital influencer or an avatar of her creator's extended self in a digital world (Belk, 2013, 2014b)? Xenobots are "both a living thing made of living cells and a machine that the researchers can program to express certain behaviors" (Simon, 2020). Consequently, what and/or who are these entities? Although such distinct forms of life have a long, intrinsic and pragmatic as well as mythological relation to humanity, contemporary approaches are far from solving any of the issues, or answering any questions on the matter in an attempt to clearly establish the ontological boundaries (Belk et al., 2020; Belk, 2016a; LaGrandeur and Hughes, 2017; Wolfe, 2018). Instead of taking an either/or as a starting point to discuss the ontological condition of humans and machines, it may be appropriate to consider that "by the late twentieth century, our time, a mythic time, we are all chimeras, theorized and fabricated hybrids of machine and organism; in short, we are cyborgs. The cyborg is our ontology." (Haraway, 1985, p. 4).

The cyborg can be seen as one of the most prominent examples of transhumanity since its origins reside in the quest for the known unknowns and the

unknown unknowns. A cybernetic organism, a machine-like human (Belk, 2017a), or simply cyborg was first discussed as a possibility for long-term space travel, in which it would be necessary to have re-engineered humans by combining drugs, electronic data processing, and cybernetics to create an enhanced human capable of surviving in outer space (Clynes and Kline, 1960). It was during the Cold War research in cybernetics that cyborgs received considerable attention and were proliferated in science fiction and academia due to Donna Haraway's work (Braidotti and Hlavajova, 2018; Hayles, 1999, 2012; Kline, 2009, 2015). One of the most significant points in her proposal relates to the ontological status of humans/animals, organisms/machines, male/female, and all boundaries that promote asymmetries and dominance of humans over others, including humans (Haraway, 2006; Latimer, 2017; Sheehan and Sosna, 1991; Tomas, 1995). As highlighted by Kline (2009), Haraway's work (1985) has led to a more discursive formation of cyborgs rather than one based on its techno-material origins in cybernetics (Wiener, 1949, 1950; Wiener and Schadé, 1964).

Regardless of their existential condition, the genealogy of the cyborg has several milestones and branches, for this reason the dimension of restorative medicine was considered as a starting point for discussion (Case, 2014; Hables-Gray et al., 1995). Both for moral and practical reasons, merging with technology can be observed in the field of restorative medicine given the consumption of prosthetics, such as insulin pumps, pacemakers, artificial limbs, gene editing via CRISPR[13], or IVF (Pettersson, 2017; Quigley and Ayihongbe, 2018; Takhar and Houston, 2019). Along the pathway of overcoming challenges, the sense of positive morality is often highly associated with this type of cyborgization (Case, 2014; Hables-Gray et al., 1995; Oudshoorn, 2015). Although sounding contradictory, as shown by Lima et al. [s.d.], consumers narrate their recovering of control over their sense of humanness by blending with technology, given that sometimes it is the only way to stay alive (Chorost, 2005; Haslam, 2006; Lupton, 2012; MacVittie et al., 2013; Manzocco, 2019). An example of a non-volitional cyborgization and its psychosocial consequences may be taken from the Robocop movie, from 2014. At first, Alex Murphy, the main character, did not accept his new condition and faced

[13] It is a gene editing technique that alters DNA for multiple purposes, such as to eradicate diseases (NIH, 2020).

a state of denial, anger, grief, and complete perplexity. Despite the medical team's explanation that merging his body with technology was the only solution to keep him alive, he requested euthanasia. However, gradually, to preserve the lives of his loved ones, he fully embraced the cyborgization process. Within this context, the cyborgization process is directly dependent on a therapeutic justification for doing it, which, from a bioethical and religious perspective, does not violate moral values nor the sacredness of the body and soul (De Leeuw and Van Wichelen, 2020; Donaldson et al., 2018; Hrynkow, 2020).

Associating the therapeutic approach with a certain level of instrumentality, Clark (2004, p. 6) claims that we are "natural-born cyborgs," that is, beings capable of annexing external objects as part and parcel of our extended minds in order to live better (Heersmink, 2017; Wheeler, 2019). Clark's (2004) statements are mainly framed by a view of the human mind and body as being open to events of profound and transformative restructuration, in which new devices can be naturally incorporated into thinking and acting practices, such as doing math with a calculator or a Google search. As highlighted by Belk (2014c, p. 252), this perspective is a sort of "cognitive imperialism with a dose of behavioralism" since "even culture, language, and institutions are referred to as scaffolding for the brain and as part of the external environment that acts upon the brain." As a consequence, the embodied agency starts to encompass not only body parts but also its organic and non-organic prosthetics in a perpetual process of merging and interaction with the world (Landowski, 2005; Merleau-Ponty, 1981). So, what if the human-tech symbiosis does not have a health-related situation as its origin? What if the case is not to use the Apple Watch for an electrocardiogram as a tool with a specific end, in Heidegger's (1954/1977) terms? What if, though, the desire is purely to become a "better human," as propagated by the Extropian Transhumanism?

2.2.2.
Playing with the Promethean fire

A turning point in the discussion on human enhancement within the extropianism context is volitionality. That is, the intention to act, "the wanting to do something" (Greimas, 1987b, p. 131), which, in this case, is to exert the right to be free so as to transcend the current human condition by means of consumption of

emergent and speculative technologies (Belk, 2019a; Marinova et al., 2017; Pedersen and Iliadis, 2020; Schmitt, 2019; Shelley-Egan et al., 2018). In this sense, the idea of pure enhancement can be traced back to the former conceptualization of cyborgs (Clynes and Kline, 1960), in which the body is seen as a path for perpetual transcendence (Johnson and Rohrer, 2007), whether to survive in outer space or to go from the real world to the Matrix just like Neo.

It is worth mentioning that previous studies not only in consumer research but also in adjacent fields have been exploring different types of body interventions, in which the body is seen as a container to receive and express forms of compliance with socio-moral prescriptions and market-shaped expectations. (Cronin and Hopkinson, 2018; Liu, 2019; Scaraboto and Fischer, 2013; Thompson and Hirschman, 1995). At this point, before I delve very deeply into my theorization on cyborgs, it is crucial to define terms that are, sometimes, interchangeably used. There are numerous concepts used to relate different forms of cyborgization and human enhancement, whether from insider (i.e., biohacker) or outsider (e.g., news media) perspectives. As I further discuss in the Methods and Context section, my positioning as a member of the grinding culture was fundamental in order to critically review and compile the following set of descriptions from an emic perspective, as shown in Table 3.

Terms	Description	Example	Previous studies
Body Modification	"Refers to a long list of practices which include piercing, tattooing, branding, cutting, binding and inserting implants to alter the appearance and form of the body." (Featherstone, 1999)	 Figure 3 - Tongue splitting. Source: Riverdale (2020).	Plastic surgery (Kniazeva and Babicheva, 2017; Schouten, 1991a); Botox injections (Giesler, 2012); Tattoos (Patterson and Schroeder, 2010; Roux and Belk, 2019); Body sculpting (Engdahl and Gelang, 2019; Featherstone, 1999); Diets (Gurrieri and Cherrier, 2013; Moore et al., 2017).

Bodyhacking	The word hack refers to the practice of finding alternative ways to achieve a given goal (Levy, 2010). In this context, hacking the body means take short-cuts to improve consumers' everyday life, usually by means of consuming wearable devices (Trammell, 2015).	 Figure 4 - Biofeedback. Source: Muse (2020).	Identification and delimitation of the practice (Duarte, 2013, 2014, 2016; Duarte and Park, 2014; Ramoğlu, 2019); Quantified Self (DuFault and Schouten, 2018; Etkin, 2016; Labrecque et al., 2013; Lupton, 2016; Ruckenstein and Pantzar, 2017).
Biohacking	Largely inspired by Transhumanism and the Cyberpunk movement, it "is a do-it-yourself citizen science merging body modification with technology. The motivations of biohackers include cybernetic exploration, personal data acquisition, and advocating for privacy rights and open-source medicine." (Yetisen, 2018).	 Figure 5 - Grinding by NFC microchip implantation. Source: Lima (2020).	The biohacking movement (Delfanti, 2013; Graafstra et al., 2010; Yetisen, 2018); Sensory augmentations (Barfield, 2015; Barfield and Williams, 2017; Cabrera, 2015; Campbell et al., 2010; Doerksen, 2017); Bioethics (Bennett et al., 2009; Hogle, 2005; Pelegrín-Borondo et al., 2020).

Table 3 – Definitions of body modification, bodyhacking, and biohacking.
Source: Elaborated by the author.

Although the discussion of these concepts, framed by different consumer research theoretical lenses offers fertile ground, I have no intention to do it in this thesis. Despite their similarities, there are several dimensions that would have to be addressed to gain a broader view of these consumers' practices. Since the beginning of this study, I have emphasized my interest in Transhumanism and cyborgs; thus accordingly, the appropriate term to frame the cyborgization process investigated here is biohacking. Therefore, it is important that the outside world contemplate the interventions based on biohacking because another ontological condition is actually being achieved (Lima et al., [s.d.]). Consequently, the central tenet is that of adding

emergent and speculative technologies to create or amplify a given capacity to do something over the general norm (Lee, 2019; More and Vita-More, 2013; Sheehan and Sosna, 1991; Watson et al., 2012; Zehr, 2015, 2016). Interesting, though, as noted by Belk et al. (2020, p. 8):

> "Although we may have conceded superiority to the computer in a number of skills that we once thought defined us as a unique species, we still cling to the belief in a special spark or *élan vital* (Levy, 1992) that makes us human and unique in a way that, we hope, can never be replicated in a machine."

However, to safeguard that special spark as described, becoming more machine-like humans, volitionally merging with technology, might be a way of preventing the total extinction of humans (Barfield, 2015; Belk, 2019b; Chorost, 2005, 2011; Cordeiro, 2016; Kurzweil, 1999, 2006; Vinge, 1993). Furthermore, given the transhumanist pursuit for transcendence, becoming a cyborg would be a step closer to the god-like and magical condition that technology provides, or at least enchant us to believe so (Ammi, 2019; Davis, 2004; Letheren et al., 2020; Thompson, 2004).

Kevin Warwick, Emeritus Professor at Coventry and Reading Universities, who defies not only the limits of the socio-biological human condition but also the *Imago Dei,* is well-known for his works in the field of cyborgs. For research purposes, in 1998, he underwent a small surgery to have a NFC microchip transponder implanted inside his arm, which allowed him to control doors, lights, heaters, and computers just by his physical presence when in their vicinity. In 2002, Professor Warwick also had one hundred electrode arrays surgically implanted into the median nerve fibres of the left arm that gave him the ability to be in New York, United States, and control a robotic hand in Reading, United Kingdom, in real-time over the internet (Warwick, 2002, 2014). Figure 6 shows part of the experiment.

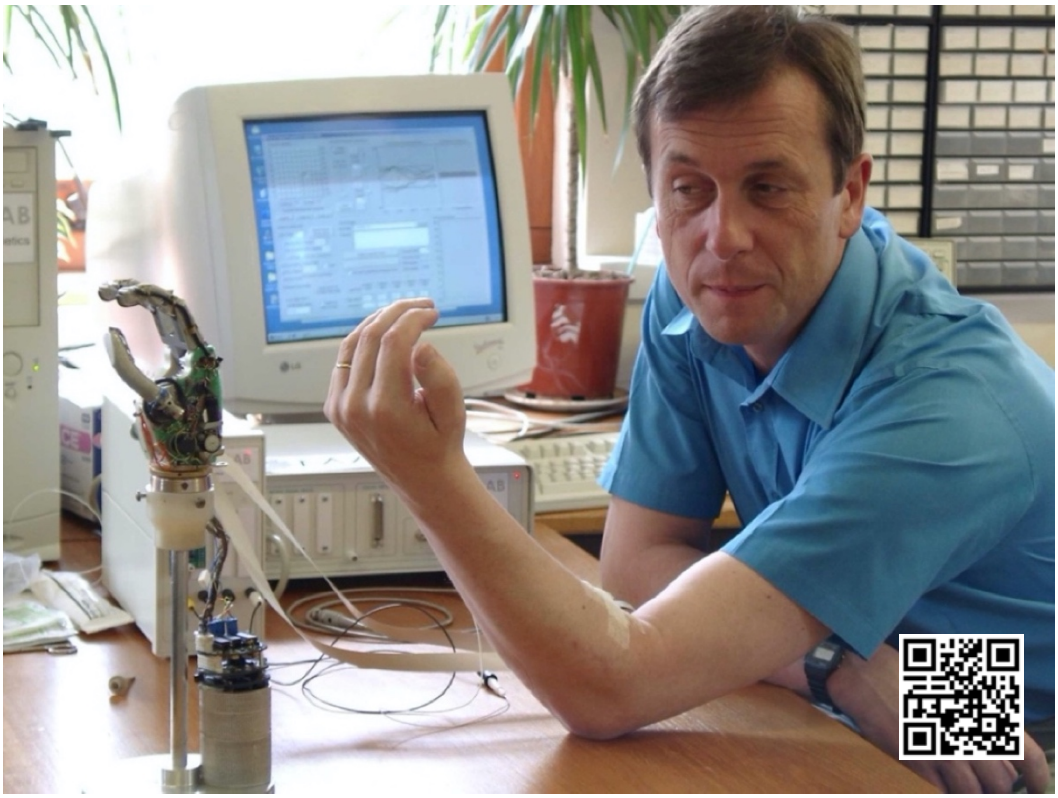

Figure 6 - Professor Warwick testing his connection with the robotic hand.
Source: Warwick (2002).

Although he is one of the pioneers of human enhancement by means of volitional cyborgization, his studies are under an institutionalized system (i.e., university) that regulates what can be done in terms of experimentation (Alcaraz, 2019; Barfield, 2019; Macaulay, 2017; Warwick, 2002, 2016). In this regard, he cannot be considered as the best example of defiant cyborgization but as a bridge between scenarios of the profane and the stable, representing the constrained, and sacred reality that is ours (Barfield and Williams, 2017; Duarte, 2016; Featherstone, 1996; Hrynkow, 2020; Ramoğlu, 2019).

Another pioneer that truly defies the gods and the odds is Stelarc. The transhumanist sees the body as an aggregate of meat, metal, and code, in which creative hackings are explored in his artistic performances. In 2007, he underwent surgery to have a cell-cultivated ear inserted into his left arm. Currently, he is working on the next phase of the project that aims to connect the internet directly to his third ear. With the functional new body part, someone in another country can listen to what he is listening to in real-time just by setting the right connection. Figure 7 shows the experiment.

Figure 7 - Stelarc and his third ear.
Source: Stelarc (2008).

Here, it is interesting to observe his relationship with the body, the notion of agency, place, and technology (Stelarc, 2008):

> "The biological body is not well *organ-ized*. The body needs to be Internet enabled in more intimate ways. THE EAR ON ARM project suggests an alternate anatomical architecture - the engineering of a new organ for the body: an available, accessible and mobile organ for other bodies in other places, enabling people to locate and listen in to another body elsewhere."

Intentionally or not, Stelarc may be suggesting an alternative to deal with the impossibility of escaping the body, as emphasized by Foucault (2006, p. 229): "as soon as my eyes are open, I can no longer escape [...] It is the absolute place, the little fragment of space where I am, literally, embodied. My body, pitiless place." From Stelarc's (2008) point of view, to do so is a matter of performing on the human body beyond the confines of its skin and the material space that it occupies.

In Figure 8, Neil Harbisson, who has achromatopsia[14], has an antenna implanted in his head that permits him to directly recognize visible and invisible colors through audible vibrations in the skull. He can sense infrared and ultraviolets as well as receive colors and files from space, or even phone calls directly into his head via internet connection. Despite the health issue, his goal is not to overcome

[14] According to Heywood et al. (1998), "Patients with cerebral achromatopsia, resulting from damage to ventromedial occipital cortex, cannot chromatically order, or discriminate, hue."

the condition but to explore his freedom to "design himself" and to become "more than human", as he often explains (Foundation, 2020). He is one of the most vocal activists in the discussion for cyborgs and non-human rights (Harbisson and Ribas, 2019).

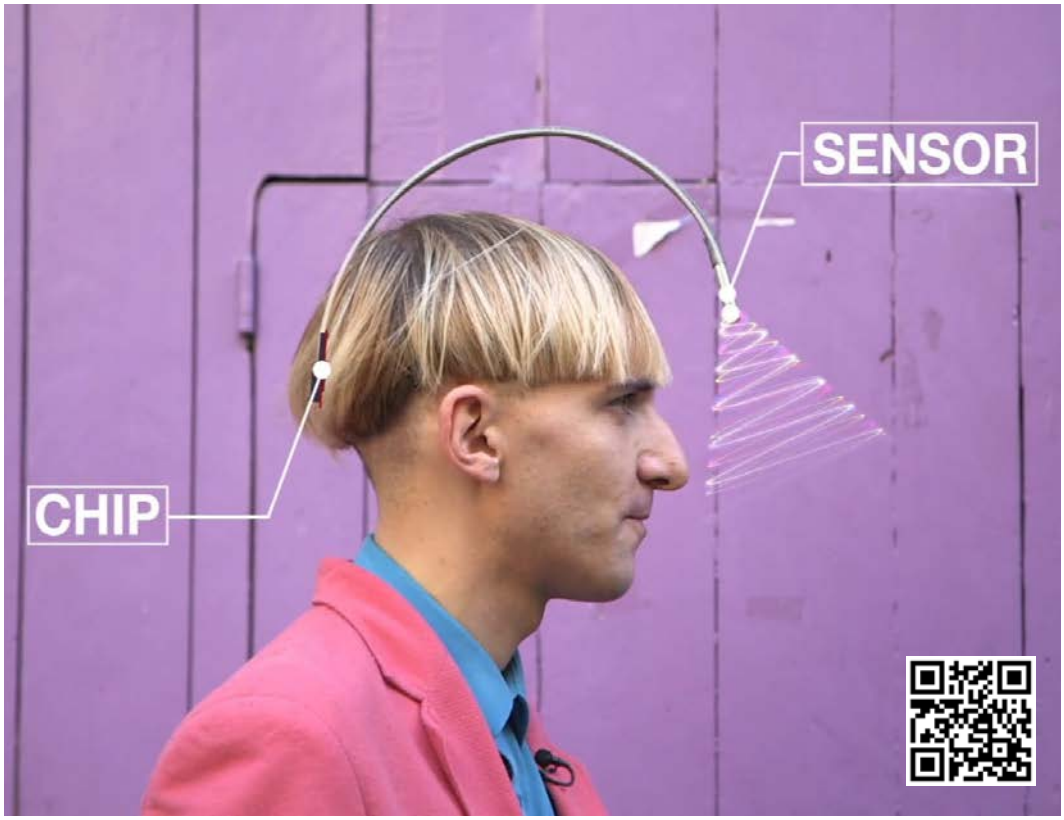

Figure 8 - Neil Harbisson and his antenna.
Source: BBC News (2014).

Moon Ribas, also an artist and activist, developed the Seismic Sense, which is an online seismic sensor implanted in her feet, allowing her to perceive earthquakes through vibrations in real-time. These interior sensations are expressed through dance and musical performances following the Earth's movements (Foundation, 2020). Figure 9 illustrates her enhancement during a TEDx talk that was conditioned to start only when an earthquake happened.

Figure 9 - Moon Ribas and her performance with earthquakes.
Source: Ribas (2019).

In the same transhumanist direction of self-designing to transcend the human condition, Russ Foxx, the Canadian Cyborg, is another iconic example of cyborgization by choice as an existential project. As he stated during an interview for CBC News: "I like the idea of upgrading myself, enhancing myself in different ways so that I can interact with the world around me in more ways and I can increase my sensory capabilities." (Zeidler, 2019). To do so, he has more than 100 types of body interventions, such as silicone horns, implants in the genitals, and NFC microchips. The tech implants allow him to start his motorcycle, open doors, in-house safes and drawers, share data, among other activities, as depicted in Figure 10.

Figure 10 - Russ Foxx exchanging data with a smartphone.
Source: CBC News (2018).

Equally in the search for mastering the known knowns, known unknowns, and unknown unknowns, Rich Lee, CEO of the Cyborgasmics and one of the pioneers of human enhancement, has magnets implanted in his ears to function as a type of built-in-earbuds, as well as microchip implants to measure his body temperature and other actions. His most singular invention is the Lovetron9000, a vibrant pelvic implant that will provide "cyborgasms," as shown in Figure 11.

Figure 11 - A box with bionics eyes, and, on the right, the Lovetron9000 prototype.
Source: Lee (2020).

These examples of playing with the Promethean fire and merging physically with technology are not the only ones. Many other pioneers would fit in here: Tim Cannon, Rob Spence, Lephy Anonym, Hugh Herr, Anastasia Synn, among other prominent names in the biohacking scene. Considering the plurality of markets, companies, types of offers, and consumers practices, it is possible to organize them in a *continuum* of options for cyborgization by enhancement inspired by Langton (1996) and Belk et al.'s (2020) concepts of Wet Artificial Life (i.e., biochemical-based), Soft Artificial Life (i.e., software-based), and Hard Artificial Life (i.e., hardware-based). Figure 12 illustrates my proposal for a taxonomy.

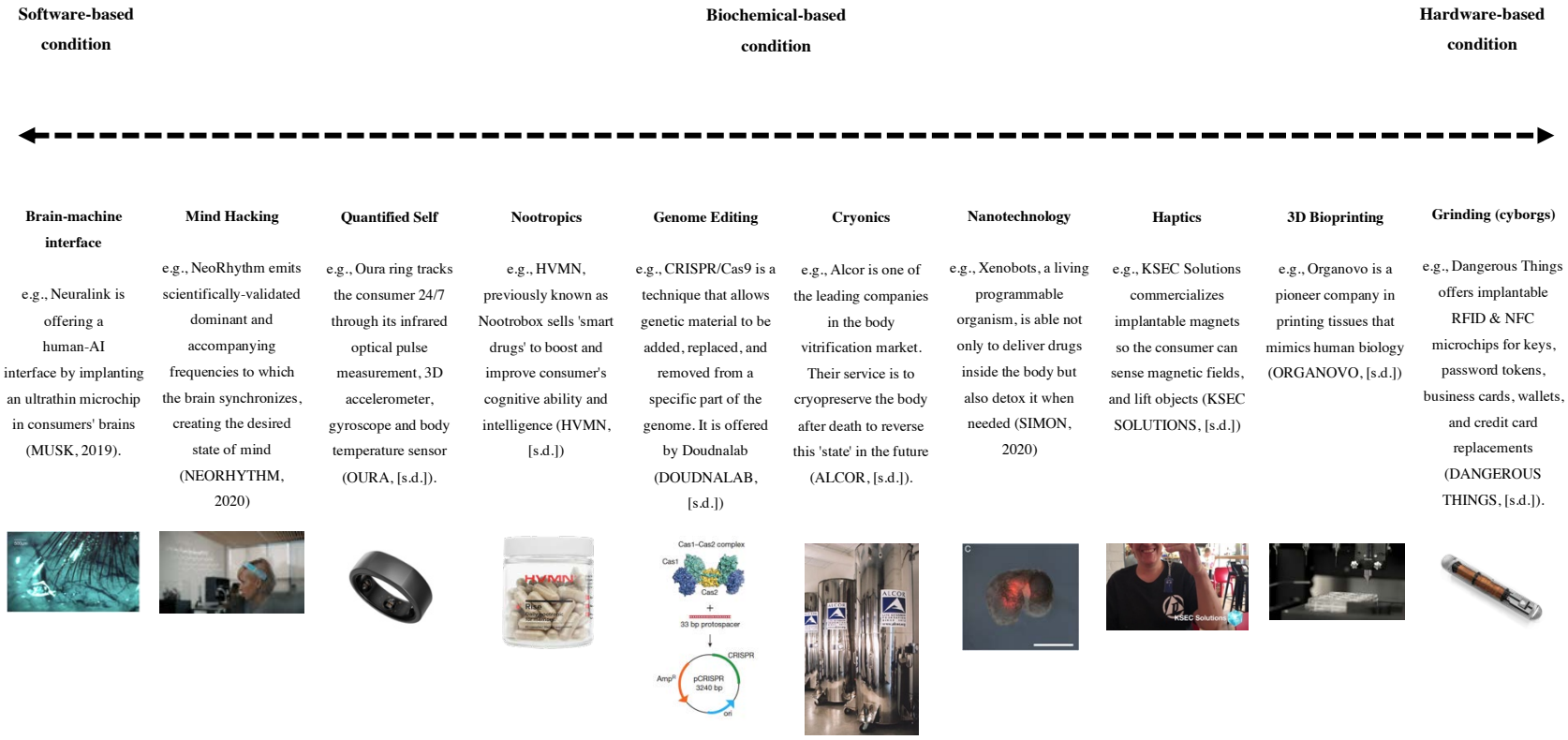

Figure 12 - Emergent and speculative technology for cyborgization by enhancement.
Source: Elaborated by the author.

On the left of the *continuum*, is the human-AI merger with a brain-machine interface. In the Singularity scenario, our existence would be based on 010101 rather than ACGT. That is, if Kurzweil (1999, 2006), Sandberg and Bostrom (2008), More and Vita-More (2013), Musk (2019), and Hrynkow's (2020) predictions are accurate, we may live indefinitely through the internet, which would lead us to have an ontological software-based condition similar to that of a Soft Artificial Life (Belk et al., 2020; Langton, 1996). In the center, via cryonics to preserve the biophysical structure of the body (Lemler et al., 2004), for beings who depend heavily on machines and special fluids to maintain their condition as a temporary state. These beings put their faith in the modern alchemists for finding a way to kill death (Cordeiro, 2016; Grey and Rae, 2007; Hauskeller, 2016; Kyslan, 2019). If successful, they may achieve the former transhumanist goal, or, in Tirosh-Samuelson's (2012) terms, the secularist fetish of being immortal. Still, near the center is the biochemical-based condition, where nanotechnology positions a real challenge in terms of ontological boundaries due to its hybrid structure (Hu and Niemeyer, 2019).

Moving to the extreme right, the hardware-based condition, where it is possible to argue that the ontological condition of cyborgs depends heavily on the physical integration with machines. Only by blending with techno-devices, is it possible to exchange data from inside the body. Somehow, this side of the *continuum* would be in alignment with the Hard Artificial Life proposition (Belk et al., 2020; Langton, 1996).

Regardless of software-, biochemical-, or hardware-based choices for human enhancement, extropist consumers desire control over their sense of humanness by means of merging with these forms of technology (Lima et al., [s.d.]). At this point, morphological freedom, religions, and bioethics may clash as the Greek titans once did. On observing those encounters between metal and flesh, humans and non-humans, the real world and the Matrix, I ask: when does the Promethean act of benevolence become rebellion? When does self-enhancement become cheating? And finally, where is the line that separates transcendence from transgression? After all, Lucifer, although fallen, is an angel. As shown by Lima et al. ([s.d.]), although consumers' narratives on cyborgization by enhancement have volitionality as their basis, becoming super-humans is sometimes seen as transgressive behavior. In these cases, when someone chooses to be outside the boundaries of the normative

ideal of the human condition and spiritual path, the hybrid shall be punished mercilessly with the greatest suffering (Thweatt-Bates, 2016). Here, it is essential to understand that transgressive behavior "does not deny limits or boundaries, rather it exceeds them and thus completes them." (Jenks, 2003, p. 7). Immersed in this fuzzy and complex entanglement of meanings, the transgressive is, therefore:

> reflexive, questioning both its own role and that of the culture that has defined it in its otherness. It is not simply a reversal, a mechanical inversion of an existing order it opposes. Transgression, unlike opposition or reversal, involves hybridization, the mixing of categories and the questioning of the boundaries that separate categories. It is not, in itself, subversion; it is not an overt and deliberate challenge to the status quo. What it does do, though, is implicitly interrogate the law, pointing not just to the specific, and frequently arbitrary, mechanisms of power on which it rests – despite its universalizing pretensions – but also to its complicity, its involvement in what it prohibits (Jervis, 1999, p. 4).

In agreement with Boss (2020), the cyborgization by enhancement has a liberatory potential despite several boundaries imposed by the networks of capital, ideology, laws, and other institutionalized systems of control. Once again, merging sacred human flesh with profane technological material could be taken as a consequence of the Almighty's obituary proclaimed by Nietzsche (1885/2006), which called for a re-valuation of the meaning and difference between transcendence and transgression, normal and pathological, sane and mad.

But one point about the cyborg's ontology that is not open to easy questioning is the perpetual process of being-in-the-world: the internalization of the external and externalization of the internal. In other words, just like Neo going in and coming out of the Matrix, cyborgs have their inorganic and organic parts in an ongoing dynamic of symbiosis, so their ontological condition can be sustained over time. The boundary that separates humans from non-humans, controllers from controlled, is blurred.

In our current philosophical and cultural framing, the perpetual and mutual influence of archetypes, myths, and consumers' narratives do not allow for any boundaries to separate cyborgs from humans without symbolizing transcendence or transgression as inherent to our sense of humanness (Lima et al., [s.d.]). Though, one question remains: is it up to the gods or to us to decide upon the limits or boundaries of being human?

2.3.
A transhumanist view on the Extended Self theory

Sitting at the base of a hill, Prometheus took a handful of soil, mixed it with some water from a stream, and began to mold the clay. Opening his hands, he looked at his work and saw a figure made in the image of a god, though modest and fragile. And so, it was here that we became: humans (Dougherty, 2006; Hamilton, 2017). Just as the Matrix is the creation of the Architect and Oracle, and humanity is made by Prometheus' hands, in both cases, the created creatures can be regarded as part of the creators' extended selves (Belk, 1988). Following the same idea, in this section, I offer an extension of what has been extended in consumer research for the last three decades: the Extended Self theory (Belk, 1988, 2013, 2015a). To support my arguments on the cyborg's ontological condition, I may have to, respectfully and humbly, transgress some boundaries but without fearing hubristic consequences, such as having my liver eaten daily, since this is a faithful quest for transcendence.

2.3.1.
Visiting the creator: The Architect

In The Matrix movie, when Neo met the Architect, the creator warns that others in his presence had faced different consequences for their choices. From a discursive perspective (Greimas and Courtes, 1982), at the fundamental level of their conversation, we may find the basic articulation of freedom and restriction, as well as life and death— are all values related to Extropianism (Baily et al., 2009; Fuller, 2016, 2020; Hauskeller, 2009; More and Vita-More, 2013). Similarly during my puzzling abductive process (Peirce, 1935), I faced the same moment of choice as Neo, whereupon the question arose "What is this a case of?" which had to be answered together with all of the consequences (Belk and Sobh, 2019). Unquestionably, there is an abundant number of borrowed theories and approaches that could help me to achieve a certain level of conceptualization, such as: Impression Management (Goffman, 1959), and the considering of performative actions depending on the audiences and mutual expectations; Discursive Identity (Charaudeau and Maingueneau, 2002), as if it is solely based on a major enunciator's discursive strategy of manipulation to be a cyborg; Entanglement

Theory (Hodder, 2016; Hodder and Lucas, 2017) and its proposal for human-things with both positive and negative types of connections; Archetypes and the Collective Unconscious (Jung, 1956, 1959a, 1969a, 1969b, 1973), assuming the cyborgization process as a semiotic echo resonating from the dawn of the collective unconscious; the Actor-Network Theory (Latour, 2005) with its relational focus among several actants to the establishment of a network; the Extended Mind (Clark, 2004) and Andy Clark's instrumental and rational-based view on the use of technologies; and, finally, the Postphenomenological approach (Ihde, 2011; Verbeek, 2017) with its material sensitivity and graduations of agency based on intentionalities and mediation. In this sense, I made efforts similar to those made by Belk (2014c) and Belk and Sobh (2019) in exploring and wrestling with different theoretical lenses to explain the same phenomenon.

Consumer research has a tradition in studying consumption from an existential-phenomenological lens, the merits and challenges of which are well-documented (Arnould and Thompson, 2005, 2007, 2018; Belk, 2015b; Thompson and Hirschman, 1998; Thompson et al., 1989). Somewhat inspired by Askegaard and Linnet (2011), "not only daring an interpretation but also a leap of faith", I argue that since my focus is on the lived experience of being a cyborg based on Extropian Transhumanism (Humanity+, 2010; Lee, 2019; More, 1990, 1998; More and Vita-More, 2013), the best explanation for my research phenomenon comes from the Extended Self theory (Belk, 1988, 2013, 2015a) given its Sartrean philosophical roots, but with a little bit of an adjustment, if I may be permitted to say.

The original conceptualization of the extended self is influenced by the works of James (1890)[15], Fromm (1976), Csikszentmihalyi (1982), among other authors. Belk (1988), by articulating their proposals and his own extensive research on materialism and identity, argues that the attachment to our possessions, regardless of being objects, thoughts, ideas, locations, people or body parts, for better or worse, is essential for defining who we are and, somehow determines our place in the

[15] For the purpose of clarification, the modern concept of the Self is: "a man's Self is the sum total of all that he can call his not only his body and his psychic powers, but his clothes and his house, his wife and children, his ancestors and friends his reputation and works, his lands, and yacht and bank-account. All these things give him the same emotions. If they wax and prosper, he feels triumphant; if they dwindle and die away, he feels cast down,-not necessarily in the same degree for each thing, but in much the same way for all." (James, 1890, p. 291-292).

world. That is, "knowingly or unknowingly, intentionally or unintentionally, we regard our possessions as parts of ourselves" (Belk, 1988, p. 139), which has the act of consumption as a key element to enabling identities. In this context, as an example of the cathexis and centrality of possessions in our lives, the relationship nurtured with possessions is so profound that it is possible to experience a diminished sense of self in the case of a loss of s/he/it, similar felt in grief states (Belk, 1988, 2013, 2016b).

Twenty-five years after the *Possessions and The Extended Self* publication in the *Journal of Consumer Research* (JCR), Belk (2013) proposed an updated version of the concept inspired by technological changes in the history of the human, not by means of challenging or denying its original propositions but because it "remains more vital than ever in the digital world" (Belk, 2013, p. 477). Over the years, direct or indirectly—with almost twelve thousand citations and the most cited paper in JCR (JCR, 2020), several investigations have drawn their theorization on Belk's (1988, 2013) propositions (e.g., Abdalla and Zambaldi, 2016; Ahuvia, 2005; Fernandez and Lastovicka, 2011; Schultz, 2014; Sheth and Solomon, 2014; Šimůnková, 2019; Stone et al., 2017). Despite this scenario, Belk (2014a, p. 5, highlighted by the author) posited:

> Regardless of whether we see this fusing with objects and others as cyborgian or posthuman, it marks a fundamental departure from the extended self as originally conceived (Belk, 1988). For rather than metaphorically extending the self outward with the aid of prosthetic possessions and layers of others, it involves an opening inward and a fusing of the body with other people and things. This has the potential to *invert the notion* of extended self, transforming it into the *incorporative self*—something that almost defines the *cyborg*.

This statement raises several questions and opportunities to be explored given the cyborgization by consumption of emergent and speculative technologies (Fuller, 2011; Letheren et al., 2020; More and Vita-More, 2013; Pedersen and Iliadis, 2020; Schmitt, 2019). Therefore, my initial point is: while a king is entangled with his crown and throne, a cyborg is entrapped with his technological device. Unlike a king who can rule his kingdom even without these objects, cyborgs only fulfill their ontological condition given the ongoing interaction with technological devices.

If the cyborg can be seen as the outcome of outward and inward movements, in agreement with Belk's statement, the former proposition for the extended self

alone, is not the best possibility (Belk and Sobh, 2019). Having that in mind, instead of making an effort to show an inversion of the former concept, as suggested by Belk (2014a, p. 5), I developed my proposal based on the notion of interaction rather than on the incorporative aspect of cyborgs.

2.3.2.
Searching for answers: visiting the Oracle

Sharing the same faith as Morpheus who took Neo to see the Oracle to be positively sanctioned, I went to see Sartre through the eyes of Belk. Although my reference here is to one of the most respected and seminal theories in consumer research (Bradshaw and Brown, 2008; Brown and Schau, 2008; Ladik et al., 2015; MacInnis, 2011, 2017; Sanders and Hirschman, 1996; Sheth, 2014; Sheth and Solomon, 2014; Wang et al., 2015), it should be taken into consideration that its Sartrean influence is mainly based on the Nobel-winning treatise *Being and Nothingness: An Essay on Phenomenological Ontology*, first published in 1943. Given Sartre's closeness to the humanistic and social conflicts brought by the war, his vision and perception of what desire, freedom, possessions, and being-in-the-world meant at that period were highly agentic (Butterfield, 2012; Eshleman and Mui, 2020; Flynn, 2014; Kleinherenbrink and Gusman, 2018; Poellner, 2015).

As emphasized by Belk (2018a), Sartre (1956/1978, p. 88) states that "desire is a lack of being" and, for that, our most fundamental desire is not simply *to have* a possession but "*to be* united with the object in an internal relation in the mode of constituting with it the unity 'possessor-possessed'" (Sartre, 1956/1978, p. 589). Therefore, it is argued that the desire is always a desire for a mode of existence, *to be*, rather than the purposelessness of having possessions (Belk, 2018a). At this point, it is fundamental the understanding of two concepts, which, in a simple view, are the being-for-itself (i.e., conscious humans with their hopes, desires, emotions, memories) and the being-in-itself (i.e., the non-conscious things of the world, such as rocks, chairs, shoes, clothes, machines). Despite the Cartesian inspiration, these concepts can be seen as essential to our understanding of how consumers consume and enact their identity projects. That is, I (being-for-itself) will always have something (being-in-itself) that is external to me so that very same thing could inform who I am, promoting the dissolution of the "I/Mine" symbolic boundary, as

proposed by the Extended Self (Belk, 1988, 2013). In a latter writing on Sartre's contribution to consumer research, Belk (2018a, p. 124) posited: "In a world of object-oriented ontologies and sociomateriality we might well ask how having, doing, and being will apply to robots and super-intelligent machines. Can they desire? What constitutes identity for androids, gynoids, cyborgs, and clones?"

Further in the same text, it is also stated:

> These are the objects that we encounter through having and doing. In order to address questions like those raised in the previous paragraph we would need to ask whether the boundary between being-for-itself and being-in-itself is permeable. This constitutes a conflation that Freud called uncanny; Sartre called it magical and imagined it to be impossible. But is it? (Belk, 2018a, p. 124).

Considering the former Sartrean modes of existence (i.e., being, having, doing) that sustain Belk's (1988, 2013) concepts, I argue that having is not sufficient in maintaining the cyborg's sense of self, since *to be* a cyborg implies not only *to have* technology blended with the body but also *to do* things impossible for non-enhanced humans. That is, instead of agreeing with *to do* as "merely a transitional state or a manifestation of the more fundamental desires *to have* or *to be*" (Belk, 1988, p. 145, 146), I, very much inspired by Propp (1928/1968), claim that there is no point in *having* the magical sword and not *doing* something to defeat the monster so as *to be* the heroic character of the fairy tale. Hence, in order *to be*, we need equally *to have* and *to do*.

Attempting to answer Belk's question in the abovementioned quote, it is possible to articulate some of Sartre's latter philosophy on the existential human condition together with the material, historical, and external world. In doing so, I offer an answer to Freud and Sartre's skepticism by affirming: real-life cyborgs are among us. So, the boundaries of being-for-itself and being-in-itself can thus be seen as permeable as the fuzzy ontological condition of cyborgs as well as other forms of artificial life (Belk et al., 2020; Langton, 1996; Letheren et al., 2020; Levillain and Zibetti, 2017). This argumentation is sustained by Sartre's *Search for a Method*, from 1957, and *Critique of Dialectical Reason*, first published in 1960. In both works, inspired by Karl Marx's ideas, he recognized the importance of praxis and contingencies in the constitution of the world (Butterfield, 2012; Connell, 1982; Culbertson, 2002; Eshleman and Mui, 2020; Flynn, 1986; Kleinherenbrink and

Gusman, 2018; Thompson, 1998). Therefore, for the sake of my arguments, I am purposively selecting only the concept of practico-inert[16] to offer a transhumanist view on the Extended Self theory (Belk, 1988, 2013, 2015a). In the *Critique of Dialectical Reason Volume 1,* Sartre (1960/1976, p. 71) proposes:

> "The history of man [sic] is an adventure of nature, not only because man [sic] is a material organism with material needs, but also because worked matter, as an exteriorization of interiority, produces man [sic], who produces or uses this worked matter in so far as he [sic] is forced to re-interiorize it."

In this quote, it is possible to observe the focus on the act of production, which is, unquestionably, a legacy from the Marxist logic that informed his work at the time (Aronson, 2020). As such, consciousness, the primary object of discussion in *Being and Nothingness: An Essay on Phenomenological Ontology*, praxis is always seen to be intentional towards something/one and takes place within the context of materiality, whether tangible like a robot, or intangible like an AI code. Hence, since we live in a given context structured by historically and culturally conceived meanings, humans' existences and their essences will depend on the result of that worked matter, and not only on the agentic nature of human beings as once believed (Askegaard and Heilbrunn, 2018; Askegaard and Linnet, 2011; Belk, 2018a; Hardie-Bick, 2012; Sartre, 1957/1968, 1960/1976; Thompson et al., 1989, 1990). From this perspective, in simplistic terms, the practico-inert, in reference to *Being and Nothingness: An Essay on Phenomenological Ontology*, would be comparable to the being-in-itself. Nevertheless, as Butterfield (2012) ponders, distinct from the being-in-itself, the practico-inert is not detached from human praxis but the opposite: "the practico-inert bears the marks of praxis through and through, as it is invested with human meanings" (Sartre, 1957/1968, p. 93). Accordingly, as stressed by Butterfield (2012, p. 28), "each new action or expression builds upon the context of meanings that already exists, and contributes to this context anew." This cardinal premise of Sartre's praxis philoshophy implies, thus, a dialectical relation between humans and non-humans "whatever form they may subsequently take" (Sartre, 1960/1976, p. 111).

[16] Although the concept of practico-inert has its roots in the "Sartre's Marxist phase" (Eshleman and Mui, 2020; Flynn, 1986), I will not engage with the Marxist Existentialism as an ontological framing in this thesis.

Having said that, given the interactional movement to build the social reality proposed by Sartre (1957/1968, 1960/1976, 1985/1991), the transhumanist view on the Extended Self (Belk, 1988, 2013) fully embraces its counterpart, the Extended Object (Belk, 2015a). Natural disasters, monasteries, a prison uniform, a system failure, among other elements of the material world, have the power to change realities and exert agency over humans (Belk, 1988, 2013, 2015a). Although I have no intention to draw my arguments to object-oriented ontologies directly, it is interesting to observe another influence on Sartre's thought about the practico-inert principle by the young Marx (2007, p. 133, highlighted by the author) that seems to smoothly touch upon it:

> "The alienation of the worker in his product means not only that his labor becomes an object, an external existence, but that it exists outside him, *independently*, as something alien to him, and that it becomes a *power on its own confronting him*. It means that the *life* which he has conferred on the object *confronts* him as something hostile and alien."

The common point in the two Belkian approaches is not solely based on humans or non-humans but the notion of extension as a "superficially masculine and Western metaphor comprising not only that which is seen as "me" (the self), but also that which is seen as "mine." (Belk, 1988, p. 140). In other words, both have an outward direction, which is only one aspect of the ontological condition of cyborgs (Barfield and Williams, 2017; Belk, 2014a; Hables-Gray et al., 1995; Warwick, 2002). Accordingly, I suggest the practico-inert as the bridge for being-for-itself and being-in-itself figurativized in Belk's theory (1988, 2013, 2015a), as the Neo's headjack and the plug. To illustrate the fusion of concepts, as shown in Figure 12, I follow Belk's (2015, p. 21) statement: "the extended object and the extended self merge in our imaginations and actions. And just as objects are incorporated into the extended self, consumers are often incorporated into the extended object."

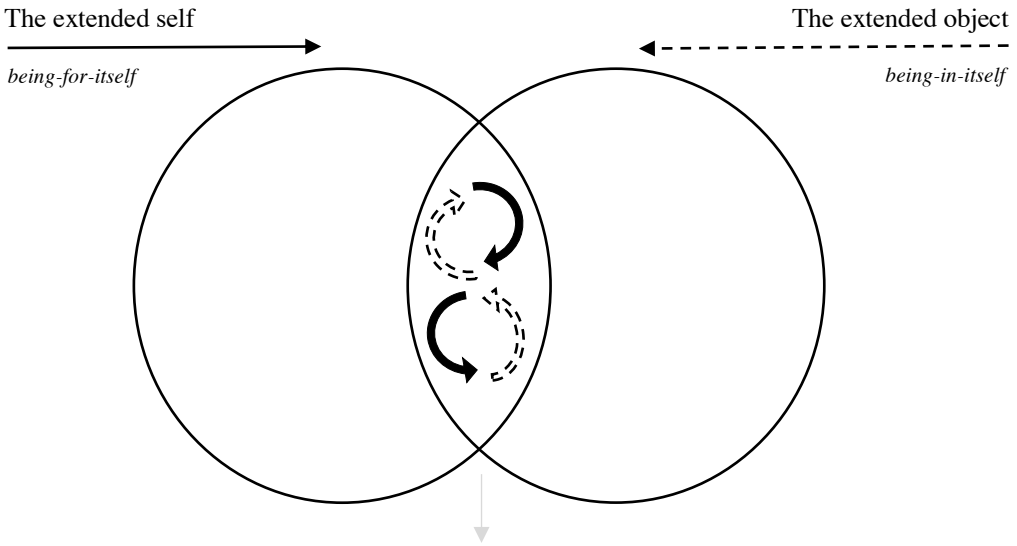

Figure 12 - Merging the extended self and the extended object.
Source: Elaborated by the author.

Having established the philosophical ground for the discussion on volitional cyborgization by enhancement through an interactive mode of existence, it is now possible to unfold the former process of extension and incorporation of possessions into the self. Sartre (1956/1978, p. 431, highlighted by the author) affirms: "*Having*, *doing*, and *being* are the *cardinal categories* of human reality. Under them are subsumed all types of *human conduct*.", which, as presented in Belk (1988, p. 150), can be grouped three-fold, through which possessions become part of the self, considering the human portion of cyborgs at least. The first one is mastering the possession, which could be seen as gaining control over something, such as controlling the room's lighting with a mobile app (e.g., Philipps Hue), or as the exemplified bicycle in *Being and Nothingness: An Essay on Phenomenological Ontology*: "Finally as one could foresee, handing over a bank-note is enough to make the bicycle belong to me, but my entire life is needed to realize this possession." (Sartre, 1956/1978, p. 592). The second way is through creation. That is, by crafting something/one from scratch it is possible to have s/he/it as part of the

self, as in the case of using CRISPR for "designer babies"[17], or purchasing the bicycle mentioned by Sartre (1956/1978, p. 592), since, as highlighted in Belk (2018a, p. 121), "even the monetary potential of acquiring an object offers a form of appropriation." Finally, the third way of making possessions a part of self is by knowing them, just like when a piercer artist knows anatomy and how to do the procedure for self-tech-implantations. For instance, Michael Laufer, Ph.D. has, in his right leg, the Pegleg device that stores data, streams music or movies, and powers a hot spot and mesh network[18].

From the Extended Object (Belk, 2015a) conceptualization, there are two types of extension through objects and consumers. The first is named extension by association and can be comprehended, for instance, when an IFTTT[19] chain is established to connect the Apple Homekit, Siri, and a Nespresso machine to make some coffee. The second possibility for objects to be extended is the extension by co-constituted action. In this case, as proposed by Belk (2015, p. 21), "the perspective embraced here is not purely that objects can make us do things, but rather that both humans and objects are needed for any behavior to occur." An example of this situation may be considered when a consumer uses a Google Cardboard or Oculus Rift, which are virtual reality devices, to "have sex with celebrities" in porn movies based on deepfake[20] technology. Bearing in mind my transhumanist view on cyborgization by choice, I must reinforce the centrality of freedom as the propelling element for transcendence both for Sartre and Extropian Transhumanism, which, in this specific case, is the morphological freedom (Humanity+, 2010; Lee, 2019; More and Vita-More, 2013; Sandberg, 2017; Sartre, 1956/1978, 1960/1976, 1985/1991). Accordingly, I will further present my theorization on being a cyborg considering the practico-inert principle that ties both Belkian proposals and subsequently, the interactive mode of existence of machine-like humans. Other processes or concepts related to the Extended Self theory and

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[17] "Designer babies" is a controversial technique to create genetically modified humans (Ranisch, 2020).

[18] A mesh work is "mesh Wi-Fi provides more coverage than a traditional router by using multiple Wi-Fi points together to create a connected system that gives you a strong signal throughout your home." (Google, 2020).

[19] IFTTT (i.e., if this than that) is a web-based platform that connects different apps and devices to interact to each other based on triggers configured by the consumer (IFTTT, 2020).

[20] Deepfakes are "powerful techniques from machine learning and artificial intelligence to manipulate or generate visual and audio content with a high potential to deceive." (Kietzmann et al., 2019)

derivations (Belk, 1988, 2013, 2015a) will be unveiled when crucial to my arguments, since they can be related to the cyborgization context without updates.

2.4.
Summary of the chapter

In an effort to better understand the phenomenon of cyborgization, the Theoretical Background chapter presented the literature on Transhumanism, then an articulation of different possibilities of cyborgization, and, finally, a transhumanist reading of the extended self concept. Although some of these topics have been scrutinized since the 1950s in other areas of knowledge, the literature and discussions on emergent and speculative technologies is fairly recent in consumer research. In most cases, for instance, the cyborg is treated as a metaphor or discursive mechanism to address sociocultural asymmetries of power, rather than as a real-life entity. Since volitionality is essential to my proposal, Sartre's latter works on the co-constitution of a given reality by the dialectical relation between humans and their surroundings are at the heart of the chapter.

Therefore, to observe how and why machine-like humans experience their existences, the following chapter, Research Context and Methods, presents my positioning as a researcher, the remarkable context of grinding, and the combination of research methods. Then the following chapter goes on to describe the longitudinal study undertaken to answer the research questions in order to conceptualize my proposal for being-in-the-world as a cyborg.

3.
Chapter: Research context and methods

3.1.
The grinding context

Since Amal Graafstra's (2013) TEDx talk, I became even more interested in ways to be integrated with technology. The Quantified Self perspective (e.g., Bode and Kristensen, 2016; Lupton, 2016, 2019), which was my first choice as a topic for doctoral research, had a great impact on my views about self-tracking and self-improvement, especially for the Apple Watch. As a wearable device, this type of product proposes, in a semiotic view (Greimas and Courtes, 1982), a conjunction between the consumer and object, almost in a Heideggerian perspective on technology. This was not exactly satisfactory to my desires as Amal's proposal and my interest resonate much closer to Sartre's views on desire and the idea of being a unit with the desired possession. In this regard, being physically unified and in perpetual adjustment with the device was truly the desired state (Landowski, 2005).

Therefore, I started to follow Amal Graafstra on social media, and other prominent names and biohacking companies, to understand their sacrifices, commitments, mysteries, communities, and the proposed ways to transcend via grinding. The first thing that I noticed was that each one of these practices, elements, and social roles pertains to the realm of the sacred and transcendent but, at the same time, to the profane and transgressive (Belk et al., 1989). At a tattoo & piercing convention, in this liminal space to which I went in 2019 to collect data, the logic of transcendent acts of transgression came about when I saw a Voodoo altar and a person tattooing a Christian cross in the same booth, side by side. My feelings were mixed, fluctuating between fear and admiration, avoidance and desire, worship and condemnation, the same feelings that technology consumption can elicit (Buchanan-Oliver et al., 2010; Lima et al., [s.d.]). Figure 13 shows a collage of pictures of the setting but not the tattoo due to copyrights claimed by the professional.

Figure 13 - Voodoo altar, sacred/profane objects, and a graphic t-shirt.
Source: Elaborated by the author.

Probably given the role of religion in my life, I cannot disregard that the blood of Christ has the purpose of purifying as well as of reminding us about his death and murderers. I must confess that it was one of the most intense, meaningful, and epiphanic moments during this research. Consequently, several dogmas, beliefs,

concepts, and terms started to overlap, which led me to search for the roots of grinding, similar to Latour and Woolgar (2013), in their effort to trace and understand the social life of a scientific fact.

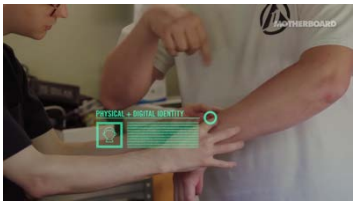
In a graphic novel from 2007, Warren Ellis introduced Doktor Sleepless, a persona of John Reinhardt: genius, philosopher, world-traveler, author, wealthy man, and a grinder. He took on the pseudonym Doktor Sleepless, the Future Science Jesus, since, as John, no one was paying attention to his claims about the future. Almost all of his ideas were based on blending technology with the body to transcend the human condition, which was frequently broadcasted via pirate radio to the counter-culture members known as Grinders. His messages were always charged with transgressive and violent tones, very much grounded in a sort of chaotic freedom *to have*, *to do*, and *to be* by means of technological revolution, as in the following quote:

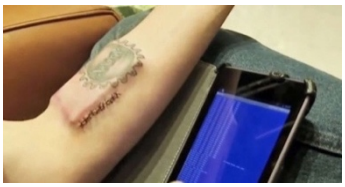
> Everywhere I go, I hear the same thing: Where's my fucking jet pack? Where's my flying car? Where's the future you were promised? The future sneaks up on us. You're science fictional creatures. Each and every one of you. You know what you are? You're *Grinders*. While you wait for the real future you think you're owed, you fuck around with your bodies like they were virtual-world avatars. You *add things* to them. You make them *better*. You treat them like characters to be improved and you *grind* them. There's no future coming. No-one thinks they owe you shit. You're waiting for a day that'll never fucking dawn...*Grinding*... *Becoming someone else*. (Ellis, 2008, highlighted by the author).

Besides finding its common origin in Warren Ellis' series of a graphic novel, it is not an easy task to identify an integrative definition of grinders as a concept (Doerksen, 2017; Duarte and Park, 2014; Malatino, 2017; Rembold, 2014; Watson and Shove, 2008; Yetisen, 2018). On the one hand, mass media has been associating grinding with cyborgs, biohacking, transhumanism, among others, often describing them as "renegade bio-hackers" (Papenfuss, 2016), "hardcore hackers" (Mallonee, 2017), "superhumans" (Quetteville, 2019), "citizen scientists" (Baumgaertner, 2018), and "medical punks" (Hines, 2018). On the other hand, divergences about what should be considered grinding also occur within communities of grinding, biohacking, and Transhumanism, as seen in two of the most prolific online forums on the matter: the biohack.me and the H+Pedia. Specifically, according to the latter, which is also one of the main platforms for Extropian Transhumanism's ideas, the proposed definition of grinder is:

> People who apply the hacker ethic to improve their own biological bodies with do-it-yourself cybernetic devices and self-mutations. Many grinders identify with the biopunk movement (also rarely admitted with cyberculture/cyberpunk movement as well and sometimes with postcyberpunk or cypherpunk movements), open source transhumanism, and technoprogressivism (H+Pedia, 2019).

Despite the differences, self-improvement, hacking not only the body but its surroundings, unlimited openness to experimentation, and searching for the unknown, are all behind the idea of human augmentation beyond the normative notion of a human being. Simply put, as my working definition in this thesis, I agree with Amal Graafstra that: "Grinders are Do-It-Yourself cyborgs that are upgrading their bodies with hardware without waiting for corporate product developed cycles or, you know, authorities to say it's okay." (Graafstra, 2013). From small laboratories, garages, basements, tattoos & piercings studios, and improvised workspaces, grinders exert their morphological freedom and existential goals performing several bloody and painful procedures to upgrade themselves with hardware (Doerksen, 2017; Popper, 2012). Examples of grinding are shown in Table 4.

Product	Feature	Installation method	Location	Example
NeXT chip implant	Business card transfer, commercial access control systems and door locks, and USB contactless.	Hypodermic needle.	Between the index and thumb fingers.	 Figure 13 - Data sharing. Source: CBS News (2017).
VivoKey	Blockchain-based, replace keys, cards, badges, and passwords with cryptographic technology.	Hypodermic needle and scalpel.	Between the index and thumb fingers and arms.	 Figure 14 - Digital identity. Source: Vivokey ([s.d.]).

xSIID NFC + LED Implant	Besides aesthetic, commercial access control systems and door locks.	Hypodermic needle.	Between the index and thumb fingers or forearm.	 Figure 15 - Data sharing and led. Source: Dangerous Things ([s.d.]).
NorthStar V1	LED large glowing disk.	Surgical incision.	Hand and chest.	 Figure 16 - LED lights. Source: Thompson (2015).
Circadia	Measures biometrics such as blood glucose, blood oxygen, blood pressure, and heart rate data.	Surgical incision.	Arms.	 Figure 17 - Data collection. Source: Halverson (2013).
xBT Temperature Sensing Chip	Transmit temperature sensor data to a compatible Bio-Thermo reader.	Hypodermic needle.	Arm pit.	 Figure 18 - Thermo-measurement. Source: Dangerous Things ([s.d.]).

TeslaFlex "Key Card" implant	Converted a Tesla Model 3 key card into a flex implant.	Scalpel and suture procedures.	Hands and arms.	 Figure 19 - Key card replacement. Source: CNN (2019).

Table 4 - Examples of grinding.
Source: Elaborated by the author.

Grinders seek transcendence as everyone desires (Sartre, 1956/1978) but through what some may consider, in many ways, bonding with the evil, or selling the soul to the Devil (Douglas, 1984; Hardie-Bick, 2012; Lima et al., [s.d.]; Skladanowski, 2019). Instead of sacralizing the human being aiming for acceptable transcendence through the *Imago Dei* or any other institutionalized narrative, the whole purpose of grinding is to transgress in order to transcend, just as proposed by Doktor Sleepless (Arrigo, 2012; Ellis, 2008; Hardie-Bick, 2012; Jenks, 2003). In this regard, the analogy here can be referred to the Konami Code[21], which is a video game cheating strategy to overcome an obstacle that a character faces during the game that has its former sequence as ↑ ↑ ↓ ↓ ← →← → B A (Start) (Payne and Huntemann, 2019). The same Konami Code strategy for hacking games can be then compared to what DIY cyborgs have been doing for their existence, as well as the Promethean enactment of the trickster stealing the fire (Dougherty, 2006; Hyde, 2011). Following a sequence of creative procedures to hack the system and the laws of gods, as well as fashion their own *élan vital* (Bergson, 1944; Levy, 1992; Lippens and Hardie-Bick, 2012), they become the desired "more than humans", and move towards the unknown transhumanist future (Doerksen, 2017; Michael, 2016; Ramoğlu, 2019; Yetisen, 2018). Having the tricky Prometheus in mind, in Amal Graafstra's (2013) TEDx talk what is presented, thus, is the outcome of the applied

[21] More specifically, "The code was first used in the 1986 release of Gradius for the Nintendo Entertainment System but was popularized among North American players in the NES version of Contra, for which it was also dubbed both the "Contra Code" and "30 Lives Code", because of its nearly necessary use in the game" (Contra Wiki, [s.d.]).

Konami Code strategy on the ontological human condition propelled by the internalization of the external (i.e., NFC microchips and data) and the externalization of the internal (i.e., blood and data).

3.2.
Methods: data collection

In order to theorize following the abductive reasoning premises (Peirce, 1935), I began this inquiry by closely observing the phenomenon from different perspectives. Since the beginning, I bounced back and forth between cyborgs[22] and literature, data and theories, and blood and needles to support my claims. In this regard, during the three-years of data collection, with the purpose of answering my research questions, I collected a combination of netnographic, ethnographic, interview, and autoethnographic data relating to cyborgs. Table 5 summarizes the dataset.

[22] Henceforth, since the grinding context is properly introduced, the term cyborg will be used interchangeably with grinders, as well as the term implantation with installation, since it is the emic expression.

Period	Method of collection	Type of data	Source	Dataset	Purpose
From July 2017 to March 2020.	Netnography.	Archival, elicited, and fieldnote data.	Facebook pages: Dangerous Things (10,400 likes); Cyborg Foundation (10,000 likes); Cyborg Nest (7,000 likes); Digiwell: upgraded humans (2,000 likes); Grindhouse Wetware (7,000 likes); Facebook groups (public, private, and secret): RFID implantees (3,000 members); Cyberpunk fiction and culture (65,000 members); Cyberpunk Tokyo (7,600 members); Singularity: keeping an eye on the technological singularity (2,000 members); Transhumanist Art (2,000 members); SyntechBio - Biohacking Network (2,800 members); KSEC cyborgs (900 members); Transhumanism (8,000 members); Global Transhumanism Association (19,705 members); Biohack.me (2,000 members); Scientific transhumanism (20,000 members); Biohacking and genetic design network (5,000 members); Dangerous Things beta group (1,300 members); Dangerous minds podcast (29 members); Transhumanism: the future of humanity (13,064 members); Magnet implants (376 members); Biohackers' Handbook Insiders (2,000 members); Hacker culture (1,800 members).	More than 30,000 posts with texts, images, videos, links, and their comments. The final dataset is composed of 2,500 entries.	To gain first-hand experience on the culture of biohacking and grinding so I could understand *what* the phenomena was and *how* consumers were becoming cyborgs. Since part of contents reached the general audience, this methodological stage was fundamental to also comprehend the public perception about the topic and contrast with my ideas.
			Twitter: #cyborg OR cyborg, biohacking OR #biohacking, biohacker OR #biohacker, transhumanism OR #transhumanism, transhumanist OR #transhumanist; negative keywords (e.g., UFC, cris, MMA, teentitans, titans, justiceleague, spiderman, injustice, theflash, DCUniverse, DC, Criscyborg, UFC232, leoa, justino, DC comics, aquaman, doompatrol, rayfisher, ReleaseTheSnyderCut, smallville, TheDCUniverse, rehsifyar, theDCEU, comic, shazam, MMAJunkie).	More than 40,000 tweets with texts, images, videos, link, and their replies. The final dataset is composed of 3,500 entries.	
			Instagram: #cyborg OR cyborg, biohacking OR #biohacking, biohacker OR #biohacker, transhumanism OR #transhumanism, transhumanist OR #transhumanist	More than 200,000 posts and their comments. The final dataset is composed of 5,000 entries.	
			Youtube, Netflix, and Amazon Prime: Transhumanism: could we live forever? BBC News; Cyborgs, Futurists, & Transhumanism: a conversation; Wizard Gear - The Oura Ring for Tracking Biometrics; Transhumanism - Full Documentary; Biohacker Summit - Dr. Max More - Transcending what means to be human; DUST; Cyberpunk Documentary | Neuromancer, Blade Runner, Shadowrun, Akira; Should we get an RFID Implant - The Medical Futurist; Deus Ex: the Eyeborg Documentary; Future Grind | Implanted identity with Amal Graafstra; Biohacking and Transhumanism with Amal Graafstra; The man biohacking encryption from his garage - Motherboard; Several TEDx; Under My Skin; Bionics and Transhumanism - Full Documentary 2017; BDYHAX; Cyborgs Among Us; Unnatural Selection	More than 100 hours of documentaries and conference panels, with their 8,000 comments.	
			Reddit: r/biohackers; r/singularity; r/technology; r/transhumanism.	More than 1,826 threads and approximately 27,390 comments. The final dataset is composed of 1,300 entries.	
			Forum: biohack.me and VivoKey (invite only).	More than 500 threads and approximately 3,730 comments. The final dataset is composed of 600 entries	
From July 2018 to December 2019.	Ethnography.	Fieldnotes, photos, audio and video recording.	Conferences: Villain Arts x Covered Tattoo & Art Expo (Canada); Hacktudo (Brazil).	More than 100 informal talks helped to compose this data set. There are 200 photos, 2 hours of videos, 3 hours of audio, and 26,050 words of fieldnotes.	To have face-to-face informal talks, see the rituals and performances that sustain biohacking and grinding culture, interact with different profiles of consumers and specialists so a deeper knowledge could be gained about the *what* and *how*.
			Seminar: Introduction to the World of Tech Implants with Russ Foxx (Canada).		
			Meetups: Biohackers Social (Canada); HackerNest (Canada); Dark futures (Canada).		

From January 2018 to February 2020.	Phenomenological interview.	Audio recording.	I purposively selected six participants with different sociodemographic profiles, backgrounds, and stories, but all consumers of NFC microchips that could best represent the cyborgization phenomenon under study.	Interviews took place at coffee shops and Skype. The conversations lasted from 40 minutes to 3h30, approximately. After verbatim transcription, they were compiled into a single document with 82,176 words.	To gain a deep understanding about the process by which *how* they became and remain as cyborgs and the reason *why* for doing it.
From September 2019 to March 2020.	Autoethnography.	Personal notes, artifacts, photos, audio, and video recording.	Artifacts: 1 VivoKey Spark microchip installed in my left hand; 1 xEM Access Controller; 1 Samsung A50 (Android); 1 iPhone 11 Pro Max (iOS). The installation was at 13 BlackCats Piercing & Tattoo Studio (Canada).	My reflections, feelings, struggles, emotions, desires, frustrations, prejudices, faith, and complex thoughts about becoming a cyborg. There are 2 hours of video, 1h30 hours of audio verbatim transcribed and compiled in a document with 9,025 words, and 2,822 words of personal notes.	To feel the feeling, to be "one of us", as often said, to have the possibility to compare, contrast, questioning, and refute ideas and preconceptions about the *how* and *why* from a singular perspective.

Table 5 - Summary of the dataset.
Source: Elaborated by the author.

Over time, given the volume of data that I was gathering as well as my theoretical understanding about the phenomenon, the lived experience of researching what became part of my personal life led me to further narrow the search for consumers' experiences and their microchips. The ensuing paragraphs detail each method used to collect data.

3.2.1. Netnography

In order to gain first-hand experience on the grinding culture so that I could understand more broadly *what* the phenomenon was, and *how* consumers were becoming cyborgs, netnography was my first methodological step. Netnography is a naturalistic method appropriated for exploring ongoing discussions in the online environment (Kozinets, 2019b), and it was also fundamental to comprehend the public perception about the topic, and contrast this with my ideas, since part of the posts reached mass media. From July 2017 to March 2020, I followed hashtags, such as #cyborgs and #biohacking, to monitor and curate exchanges in the vast deep data flowing through public and private online platforms, mainly framed by the immersive data operations guidelines (Kozinets, 2019b). This way, during my abductive process (Belk and Sobh, 2019) and my constant quest for "black swans" (Kozinets, 2019b, p. 282), while also attempting to preserve the original context as much as possible, I kept descriptions and conceivable explanations in my immersion journal.

Since the topic encompasses several dimensions and possibilities, the hashtag was considered as the isotopic marker, which, in this case, guarantees the connection of a given narrative to another one on the same topic over time and place (Greimas and Courtes, 1982). Furthermore, where it was applicable, I used Boolean operators (e.g., AND, OR) for each social media to refine and avoid data unrelated to my research focus. At a certain point, the hashtag became secondary, given my immersion and knowledge about what and where I should observe, which led me not only to the public but also to very specific, private, and secret groups on Facebook and invite-only forums. In certain circumstances, to become a member, I was required to fill out a form and answer questions about transhumanism, biohacking, grinding, and tell my personal story. As a consequence, my

membership was not restricted to "ordinary and non-professional" consumer groups (Roux and Belk, 2019, p. 489) since I participated in beta and developers' communities as well. My positioning as a Ph.D. student was always disclosed, as, for instance, on my Instagram bio profile and Facebook group interactions, as shown in Figure 20.

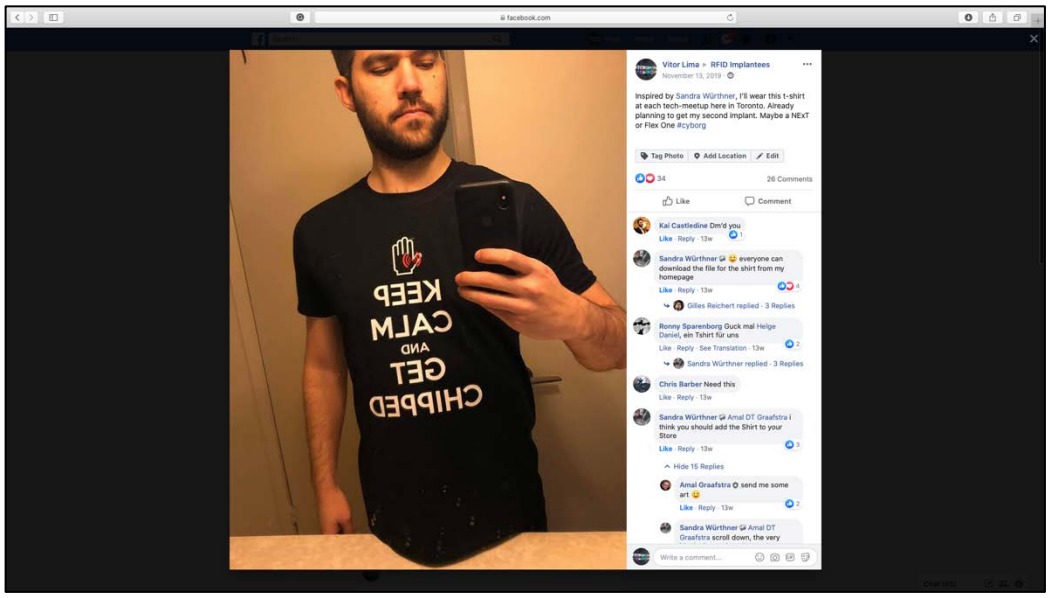


Figure 20 - My post about the new t-shirt to wear at meetups.
Source: Facebook (2019).

In my daily consumption of social media content and interactions about the cyborgs' universe, I paid attention to five criteria utilized in data-selection operations in order to conceive the final dataset (Kozinets, 2019b, p. 227). In this regard, (1) relevance, which is the more important of the selection criteria, was naturally unfolding itself over time since the hashtags and invitations were guiding me towards my research goals. Next, the recency and regularity of the flow of information about products, procedures, and dilemmas on those platforms sustained the (2) activity criteria. The (3) interactions between people is important to the data collection, once it can be seen as a marker of a community. I received a badge, for instance, from one of the Facebook groups in which I was constantly interacting with other members, as shown in Figure 21.

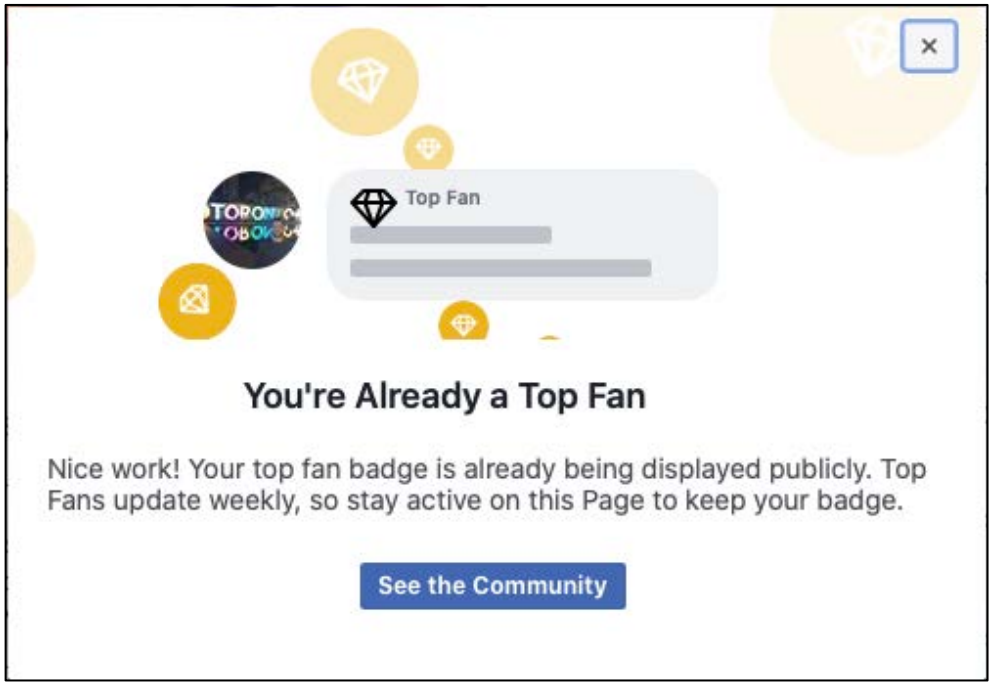


Figure 21 - Top Fan badge for frequent interaction on a Facebook group.
Source: Facebook (2019).

A key component within most social media platforms that I was investigating is (4) diversity. This aspect reflects the necessity of plurality in terms of expressions and perspectives, which can be seen by the presence of consumers, enthusiasts, entrepreneurs, and even technology-specialized journalists. The (5) richness of data description about cyborgization is immense: from simple photos of products' boxes to videos of bloody procedures. In accordance with Kozinets' suggested ethics guidelines (2019b, p. 179), even though I had the permission from administrators and invitations to join groups and forums, it is worth mentioning that I avoided the use of contents from secret and invite-only platforms to illustrates examples. Moreover, protecting the anonymity of consumers, pseudonyms have been used throughout this research, disregarding cases of public persons in mass media and news reports. The final version of the immersion journal has 22,100 words.

3.2.2. Ethnography

From July 2018 to December 2019, I started attending conferences, events, and meetups about emergent and disruptive technology to be able to collect and, somehow, interpret data in situ. In an exploratory way, my initial contact was with

hacking enthusiasts and the makers movement, which is a technology-based extension of DIY culture (Buxmann and Hinz, 2013; Moisio et al., 2013; Wexler, 2017).

My first event, Hacktudo, was in Rio de Janeiro, Brazil, targeted for techno-enthusiasts regardless of their preferences. At its huge installation, throughout the day I had informal conversations with 30 participants about the future of technology, forbidden/best practices for hacking systems, human-computer interactions, assembling smart devices with Arduino and Raspberry Pi, robots fights, among other topics. Also, following Belk et al.'s (1988) recommendations for data collection and recording, I captured 40 photos, 15 videos with 30 minute, and 10 minute durations of non-structured interviews. I did not have a particular interest in a specific demographics profile since the intention was really to grasp the "fantasies, feelings, and fun" of consumers at the event (Holbrook and Hirschman, 1982). Although exploratory and not directly related to grinding, this pilot fieldwork was essential for the definition of types of events, communities, consumer profiles, and the refinement of the protocol for data collection and recording. At this point, the simultaneity of the netnographic investigation further enriched my understanding of the phenomenon and subsequent methodological steps (Figueiredo and Scaraboto, 2016; Kozinets, 2019b; Kozinets et al., 2017; Scott et al., 2017).

Feeling more prepared and acculturated to have face-to-face talks, see the practices of the biohacking and grinding culture, and interact with different profiles of consumers and specialists, I started to participate in segmented meetups and exhibitions. Having in mind that "writing accounts of what happened during face-to-face encounters with others in the field is very much part of the doing of ethnography" (Emerson et al., 2011, p. 125, 126), my smartphone was always at hand to write fieldnotes, take photos, record audio, and videos only when consented. Based on Belk et al. (2013) and Fetterman's (2010) recommendations to search for patterns, shared rituals, social interactions, ideas, meanings, and beliefs in ethnographic fieldwork, my researcher observation guide is exemplified in Table 6 with an excerpt of fieldnote.

Event.	Meetup: Biohackers Social.
Date and duration.	08/20/2019 - 3h (monthly event).
Country.	Canada.
Photo, audio, and video.	Only group photo.
The selected site (e.g., physical aspects, clean or dirty installations, shared or private space, lightning, smells, number of people).	7 West Cafe is located Downtown. I was the first to arrive there. Maybe the place had been chosen given its low lighting because of blue lights and melatonin stimulus. We were 12. Some already known, others new (me). Caca (organizer) explained to me that they are a global collective of biohackers.
Social dynamics (e.g., types of interactions, standing, sitting, learning, watching).	When I was explaining my research, Caca said: "I'm Schulich Alumni! What a coincidence!" She tried to keep the conversation going. Guy did too. They were very open to newcomers and interested in sharing information regarding genetics and food. They agreed with everything, and there was no criticism at all. Although the organizers were the only ones wearing t-shirts of the collective, it seemed to be a balanced group. They didn't know much about NFC chips and only considered me as a biohacker when I started to talk more about definitions that include smart drugs. Caca said: "I see… if there are smart drugs, you are a biohacker. Because augmentation is not biohacking… it's something else. Like… a previous thing". In the end, they agreed with me about biohacking, grinding, and cyborgization.
Social roles (e.g., enactment of archetypes, organizer, participant, enthusiast, lurker).	Each one of them was trying to achieve a certain success in experimentation. From food to smart drugs. Guy seemed to be the most senior. All of them seemed to be highly educated and smart. One common point is their articulation about ethics, freedom, and the control of their bodies. The prevalent discourse is that markets, managers, researchers, physicians, among others, don't know the things that biohackers know given the different constrains. From the attendees, only two ordered food - two self-described "overweighted" members (there was a discussion about their food and body interventions). Most of them have started biohacking as a way to cure/minimize an illness, such as endometriosis.
Artifacts (e.g., products, logos, colors, packages, ads, medical equipment, hardware, organic or inorganic).	They were all about ingredients. No one drunk alcohol. Only sparkling water, which was carefully examined, and the source questioned. Actually, it was like a domino effect - Caca asked first, and the rest followed. Two or three were wearing Oura rings to track their bodies and checking results on smartphones (very Quantified Self). One of the first things Caca said to me after "nice to meet you" was "Let me put on my biohacker glasses". Caca and Guy had a discussion about blue lights and took off their orange glasses after they agreed that the environment was "OK". Three of them had a bottle with some mixture, like a 'special juice', to drink after eating or drinking anything not made by them. One of the most interesting points was the cow: to be sure that they're not eating "bad" meat, they buy a live cow from a local farmer who prepares it for them. The farmer lives up North, in a kind of village, and doesn't work with any artificial additives.
Interactions between human and non-human (e.g., facial expressions, gestures, mannerisms, specific words, conversation summary, inside joke).	They were all calm and "self-controlled", somehow. Only two of them seemed to be more anxious and talkative. The gestures were not too expressive (perhaps because of the small space). They knew all the chemistry, pharmacology, and anatomy technical terms and the references to drugs were also in technical terms. Caca asked me: "What is your favorite hack?" I said: "Mine... the NFC microchip!"
My subjectivity (e.g., prejudices, thoughts, ideas, questions, concerns, feelings).	Their idea of hacking is related to fixing a health issue, a flaw of the body. In the beginning, I felt a little bit judged when I talked about hacking the body with the microchip. Their faces were like "Wow… you're weird…" One guy said: "That is too much". They asked me more than two or three times: "Why are you doing this with your body?". At some point, Caca stopped and said: "You're right… it's your body. You can do whatever you want." What is the difference? Natural x artificial? Restoration x enhancement? The secrecy of the body. They took pills and do drugs… again: what is the difference? One can be processed by the body; the other cannot. There is a contradiction here. Given the lack of knowledge about the technology, the main concern was tracking (even though some were Oura ring users). They want to remain human… hacking is to become a better version of humans and preserve its ontological status. It seems that the group is driven by a functional logic, not a mythic or aesthetic one. It seems to be a game of power (I know more than them - or I'm faster/smarter/better). Virtues are explored and constructed in different ways - they are moral because of their actions. Perhaps biohacking is a way to discursively build morality and the body the vehicle for doing and showing it.

Table 6 - My researcher observation guide and an example of fieldnote.
Source: Elaborated by the author.

Despite the protocol and preparation for the fieldwork, I had some drawbacks similar to those described by Goulding et al. (2004) and Fetterman (2010), in which, for instance, a certain event was not allowed to be recorded even previously authorized. However, due to my multi-sited ethnographic approach, as in the case of Belk et al. (2003), Visconti et al. (2010), and Woermann and Rokka (2015), key informants, continuous participation in other events, and multiple sources of data, the supposed missing part was probably captured in another moment (Belk et al., 2013; Emerson et al., 2011; Fetterman, 2010). As an example of plurality, Figure 22 shows four pictures of two events as well as different social settings (i.e., Villain Arts x Covered Tattoo & Art Expo and Dark Futures, both in Canada).

Figure 22 - Villain Arts x Covered Tattoo & Art Expo's photos at the top and Dark Futures' at the bottom.
Source: Personal archive (2019).

Even though it is easier to find and meet grinders on the internet given their "online community-based *ethos*" (Doerksen, 2017; Duarte, 2014; Giger and Gaspar, 2019; Graafstra et al., 2010; Yetisen, 2018), over time, the passage from outsider to insider (Bhattacharyya and Belk, 2019; Goulding et al., 2004; Roux and Belk, 2019; Schouten and McAlexander, 1995) happened mainly after having my own

NFC microchip installation, which will be further detailed later. As one of several possible examples of this passage, during the Villain Arts x Covered Tattoo & Art Expo in 2019, I attended a seminar on basically how to do tech-implants, which was led by Russ Foxx, one of "The Creators" often mentioned in grinders' events and online discussions. Figure 23 shows my certificate.

Figure 23 - My certificate for the seminar.
Source: Personal archive (2019).

Not only did my network of grinders increase significantly but also biohackers as a whole, which had a meaningful role in narrowing my data collection as well as my theoretical framework. Considering my existential-phenomenological framing for this research, the requisites for phenomenological interviews were unquestionable.

3.2.3. Phenomenological interviews

Similar to previous studies (e.g., Bardhi and Eckhardt, 2012; Kozinets et al., 2017; Muniz and O'Guinn, 2001), the netnographic and ethnographic observations

helped in the outlining of the interviews with their insights along with my puzzling thoughts and eclectic literature. Although influenced by these preceding methodological steps, my interest was not on the cultural level, but on the individual experience of being-in-the-world (Arsel, 2017; Sartre, 1956/1978, 1957/1968, 1960/1976, 1985/1991; Thompson et al., 1990). Therefore, phenomenological interviews (Kvale, 1983; Polkinghorne, 1989; Smith et al., 2009) were my choice to gain a refined and better understanding of the process by *how* consumers became and remained as cyborgs, and the reasons for making this volitional ontological shift.

To do so, from January 2018 to February 2020, based on my theoretical foundations and consistent with previous interpretive research, I purposively selected six participants with different sociodemographic profiles, backgrounds, and stories, all of whom were consumers of NFC microchips, and could best represent the cyborgization phenomenon under investigation (Bahl and Milne, 2010; Hirschman, 1994; Miles and Huberman, 2014; Wallendorf and Belk, 1989).

As prior research showed using the same methodological apparatus, participants were more open and inclined to provide personal details of their lives since I had an established relationship of commitment with the community, and accordingly, with them (Ruvio and Belk, 2018; Schouten, 1991a, 1991b; Scott et al., 2017; Thompson and Hirschman, 1995). Furthermore, as mentioned by a grinder during an informal talk at a meetup, they do not like to be treated as someone's "lab rats" and be an "institutionalized subject of an experiment." In this scenario, I had to be extremely cautious about references and invitations since this is a small community. Table 7 presents their profile.

Pseudonymous	Education	Occupation	Body Part	Chips	Purpose of installation	Length and recording method
CyberTo.	Ph.D.	Engineer, biohacker, entrepreneur, and Ph.D. in medicine researching and developing chips, robots, and security software.	Both hands.	2	To share business card, access office's doors, authenticate smartphone and computer's login, experiment new techniques of biohacking for product development.	70 minutes of audio recorded on Skype.
CyCybo.	M.Sc.	Journalist, designer, biohacker,	Both hands.	2	To experiment with the technology by	180 minutes of audio recorded at

		entrepreneur, and artist.			sharing data, such as business card, second, and to be the only person able to play a musical instrument given the authentication process.	an art exhibition.
CyRa.	College degree.	Technology-specialized journalist, entrepreneur, and hacker.	Left hand.	1	To share business cards (vCard) and store files.	40 minutes but only annotations and several emails.
CyL.	Ph.D. student.	Journalist and biohacker.	Left hand.	1	To explore and understand what the phenomena was about, share business card, and have authenticated computer's login.	70 minutes of audio recorded on Skype and several emails.
Cybug.	M.Sc.	TI specialist.	Right hand.	1	To hack another person's mobile phone but now the use is to replace ID, transfer business cards, open workplace doors.	60 minutes of audio and video recorded at a cafeteria.
Cyat.	College degree.	Tattoo & piercing artist, entrepreneur, and biohacker.	Both hands.	2	To have control over things and people's body in an artistic way.	40 minutes of audio and video recorded at a tattoo & piercing studio.

Table 7 - Interviewees' profiles.
Source: Elaborated by the author.

Inspired by Sartre's (1956/1978, 1957/1968, 1960/1976, 1985/1991) portrayals of people's engagement in existential projects in the world and their embodied, interpersonal, and moral daily encounters, my inquiry about consumers' lived experiences was guided by first paying attention to their intentionality acts and the description of the world as lived. Second, eliciting a narrative of reality without setting any asymmetries of knowledge or power in dialogical fashion; and finally, having in mind that all of us are social beings and our existence is always dialectical with the world, precluding any form of Husserlian phenomenological reduction.

Within this perspective, my active and interactive role during interviews was guided not by a structured protocol but, first, by a grand tour question and then by probes and other questions according to interviewee's reactions and responses (Belk

et al., 2013). Table 8 shows examples of my questions and their nature based on an adaptation of Smith et al.'s (2009) suggestions. Even though they were not accurately asked in this way, the purpose here is to illustrate the flow of conversations.

Nature of question	Example of question
Grand tour	Could you tell me a bit about yourself and the technologies you like or use?
Descriptive	Can you tell me what you do with your chip? What about the smart objects?
Narrative	Could you tell me about how you see grinding?
Structural	What were all the stages in the process of implanting your chip?
Contrast	What are the main differences between biohacking and grinding?
Evaluative	How do you feel knowing that it is inside your body?
Circular	What do you think your family thinks about your hacks?
Comparative	What do you think your life would be like if you had more chips?

Table 8 - Examples of questions.
Source: Adapted from Smith et al. (2009).

Given the natural and emotionally supportive atmosphere, throughout the interviews, concepts and terms overlapped, such as grinding and biohacking, as well as the variety of possibilities of human enhancement, as interviewees talked about adjacent practices and products. To safeguard the best practice in phenomenological interviews, whenever the conversation became too loose, I managed to connect the topic with my research focus without taking away their freedom to tell their lived experiences as they wished (Hirschman, 1994; Kvale, 1983; Polkinghorne, 1989; Smith et al., 2009).

Each audio-recorded interview was transcribed verbatim. Any identifying of names or references were replaced by pseudonymous to secure anonymity, chiefly due to the innumerous cases of harassment and even life threats from extremists for carrying the biblical "Mark of the Beast" (see Revelations 13:16-17) and conspiracy theories (see Fast Company (2018) and the comments below the video). All ethical procedures regarding this methodological step were based on Brazilian and Canadian requirements for research with humans (CNS, 2016; Panel on Research Ethics, [s.d.]).

3.2.4.
Autoethnography

I have always been fascinated by the mythical, numinous, and theophanic aspects of technology. When I was a skinny, catholic, Hip Hop dancer, a well-behaved and disciplined karate kid, one of my dreams was to be one of the X-Men, especially Wolverine, with his enhanced healing, indestructible adamantium skeleton, and animalistic fury. During my adolescence, when my shadow archetype (Jung, 1959a) seemed less brutal in retrospect, not only my reading but also my interest as a whole moved towards Dr. Strange, given his brilliant mind and magical hands to safeguard one of the Infinity Stones. About ten years ago, the Iron Man started to make more sense in my life, rather than those "demi-god" characters that I had once incorporated as part of my self (Belk, 1988). Tony Stark, an individual with all of his flaws, desires, complexes, virtues, and subjectivity (Jung, 1969a), suffered a bomb attack which determined a changing of his ontological condition as a human.

As portrayed in the movie Iron Man, some shrapnel from the bombs got lodged in his heart, causing him to need an electronic cardiac prosthesis to stay alive, which turned him into a machine-like human: a cyborg (Belk, 2020, 2014a, 2017a; Case, 2014; Clark, 2004; Clynes and Kline, 1960). Despite different contexts and reasons for the cyborgization of human beings, either through restoration or enhancement (Case, 2014; Hables-Gray et al., 1995), all of these characters had an astonishing episode in which the same question was probably asked: *#WTF is going on*? During Amal Graafstra's (2013) TEDx talk, my heart raced, and my mind went blank. It was a magical, exciting, desirable, and terrifying sensation that technology can eventually lead us to such miraculous experiences (Belk, 2016a; Bennett, 2016; Davis, 2004; DeFalco, 2020; Fernandez and Lastovicka, 2011; Mayor, 2018; Musiał, 2019). And then, an epiphany came: does that mean that I can *have* some of the Iron Man's abilities? Is it possible *to do* things like he does? So, can I really *be* a real-life cyborg? *#WTF is going on*?

As suggested by Denzin (2014, p. 28), every "biographical project starts with personal history," and this one is mine. These firsts paragraphs represent the beginning of my autoethnography *On Becoming a Cyborg* (Lima et al., [s.d.]), as prior studies in consumer research did (DeBerry-Spence, 2010; Gould, 2012;

Holbrook, 2005; Kapoor et al., 2020; Minowa et al., 2012; Valtonen, 2013). As Sartre (1971) started his endeavor to make sense of the Flaubert's life from his childhood, my approach is a variant of Sartre's (1957/1968, p. 85-166) progressive-regressive method, which begins with a key event in the individual's life. The method presented by Sartre's (1957/1968, p. 85-166) has two levels to be taken into consideration: (1) the macro level with all structural factors and history, which can be seen as a Marxist influence on his latter works; (2) the micro level representing the self-creation process that has the interaction between past events and future expectations guiding our actions and, consequently, the perceptions of ourselves (Culbertson, 2002; Flynn, 2005; Thompson, 1998, 2017b; Woodward, 2007). The dialectical interplay of both levels is what shapes who we were, are, and wish to be. In this way, my key events, or epiphanies in Denzin's (2014, 2016) terms, were named *#WTF*, starting not exactly from my infancy but from the moment that a I had a microchip installed in my left hand in September 2019, as shown in Figure 24.

Figure 24 - The NFC microchip in my left hand.
Source: Personal archive (2019).

Following the first of three stages of the method (Sartre, 1957/1968, p. 85-166), my phenomenological description of the procedure was filmed and photographed, which also had audios and personal notes registered right after it (e.g., the moment of the needle injecting the chip). The second step was a regressive move from the implantation to the conditions that had led me to do that (e.g.,

childhood imagination and games). Finally, as the third step, the progressive one aimed at the identification of choices of interiorization of the external and externalization of the internal in an attempt to understand and conceive my dialectical relationship with the world. Therefore, from September 2019 to March 2020, I worked backward and forward from the implantation event to collect personal data around my four epiphanies: (1) *#WTF is going on?* (2) *#WTF am I doing?* (3) *#WTF did I do?* and (4) *#WTF can I do?* Throughout my own quest for transcendence in this transhumanist era (Ferrando, 2019; Fuller, 2020; Lee, 2019; Ranisch and Sorgner, 2015), I have been searching deep down in my dreams, beliefs, values, fantasies, and desires to find a way to get in and out of the Matrix, literally. Since I have been following the white rabbit during my Ph.D. research on cyborgs, I have decided to take the red pill and become one.

3.3.
Methods: data analysis

Given the plurality of collected communicational manifestations, my existential-phenomenological framing, and dialectical perspective on the matter, it was necessary to have an analytical tool that could help me to interpret the data from a common point of departure. The analysis was based on a combination of semiotic approaches considering the data not only as a cognitive object to be read with its *a priori* nature, as in the Greimasian canonical semiotics tradition, but also as a material element with esthesic[23] characteristics that have the capacity to produce different effects and meaningful sensations (Greimas, 1987a; Landowski, 1997, 2004, 2005, 2015). As highlighted by Bankov and Cobley (2017), Landowski (2015), and Tarasti (2001), not only Sartre but also Merleau-Ponty had a significant influence on the contemporary French Semiotics, mainly by paving the way to bridge the intelligible with the sensitive through language. In this regard, for instance, Merleau-Ponty, on the relevance of language as a mediator for lived experiences and being-in-the-world, stated: "thought and objective language as two

[23] Briefly introduced by Greimas (1987a) as a concept in the beginning of the semiotics' phenomenological project, esthesia or aesthesia refers to the capacity for sentient beings to feel and to perceive. For non-sentient beings, as a computer, their characteristic, such as smell, colors, textures, that produce effects of meanings that are felt and perceived differently by sentient beings. Etymologically, the expression "to perceive" comes from the Greek and is written as follows: *αἴσθησις* (Liddell and Scott, 1940).

manifestations of that fundamental activity whereby man [sic] projects himself towards a 'world'." (Merleau-Ponty, 1981, p. 190-191). In these terms, the conscious experience comes to be understood as a dialectical arrangement of meanings expressed through speech, action, and, thus, worked matter (Benveniste, 1973; Floch, 2001; Heilbrunn, 2015; Hirschman and Holbrook, 1992; Landowski, 2005; Mick, 1986).

As previously done in consumer research, despite in its full stages or not (e.g., Bradford and Sherry, 2015; Floch, 1988; Heilbrunn, 2015; Kessous and Roux, 2008; Kozinets, 2008; Lima et al., 2019; Lima and Pessôa, 2018; Pessôa, 2011; Roux and Belk, 2019; Semprini, 1992), the first approach to code the data was to use an adaptation of the generative trajectory of signification[24] (GTS) (Greimas and Courtes, 1982, p. 134). Table 9 provides an example of the iterative coding process for written texts, starting from the concrete level to the more abstract one.

		Syntax component	Semantic component	Data
Abstract level ↑	**Fundamental level** (i.e., primary opposition of the semiotic square)	Human vs. Machine	Human: dysphoric Machine: euphoric	"Mmh, possibly I made a terrible/stupid mistake: I just discovered the Tesla Applet in the Fidesmo App and driven by curiosity I tried to load it to my Flex One. Seems as if that somehow interrupted process bricked it." (User 1, Facebook, 2020)
	Narrative level (i.e., narrative components)	Object-of-value: Tesla applet Modality: you "have-to-do" because there is a new applet	Modalization schema: • wanting-to: install the applet • having-to: assuming that he has a Tesla car, he needs a key card • being-able-to: he has access to the Flex One code and Fidesmo platform • knowing-how-to-do: he knows coding and the process to update the Flex One	
↓ Concrete level	**Discursive level** (i.e., materialization of the narrative)	Actorialization: Consumer 1, Tesla applet, Fidesmo, Flex One Spatialization: Dangerous Things Facebook Group Temporalization: 2020	Thematization and figurativization by questioning the act of hacking the hack and the consequences of doing it (bricking the tag: unpredictability, accident). Physical and emotional pain, and, to some extent, diminishment of the sense of the self.	

Table 9 - Example of the GTS.
Source: Adapted from Geimas and Courtes (1982, p. 134).

[24] To build the meaning of texts, semiotics conceives its content plane in the form of a generative path, a theoretical model of signification stratified by three levels, going from a deeper and more abstract level to a more superficial and concrete one (Greimas and Courtes, 1982).

As the second approach for coding the data, I conceived my insights from Floch's (2000, 2001) proposals for visual analysis of photos, videos, and images. For this stage, my reference guide for coding these communicational manifestations is briefly exemplified in Table 10.

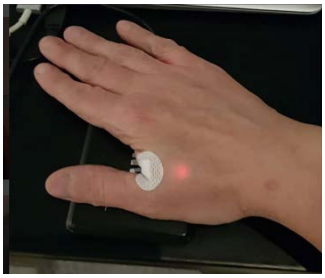
Categories	Definitions	Example of analysis	Data
Chromatic	Color combinations and contrasts: • Pure vs. merged • Brilliant vs. opaque • Saturated vs. unsaturated	It has four major colors: black, the skin tone, white, and red. Since the post is to highlight the LED installation, the contrast allows for focus on the red spot (high saturation)	 (User 2, Instagram, 2020)
Eidetic	Shapes: • Concave vs. convex • Curvy vs. rectilinear • Ascending vs. descending • Thick vs. thin	Although it is a human hand photo, the focus is on the red spot and its circular aspect. The white and rounded band aid helps in the definition of the LED shape	
Topological	Positions and orientations of shapes in spaces: • Comprehensive vs. encompassed • High vs. low • Central vs. peripheral • Left vs. right	It is an open hand in movement of ascendance for reading the tag. Despite its size in the picture, the small red spot has a major impact and significance	
Material	Corporality and materiality • Smooth vs. wrinkled • Wavy vs straight • Rough vs. soft • Cold vs. warm	Considering the esthesic characteristic of a human hand, it is not hairy or veiny, wet or dry. It seems to be soft and smooth. The red spot, however, seems to. be an odd element to the human body, producing a sensation of warm/heat	

Table 10 - Example of a visual analysis.
Source: Based on Floch (2000, 2001).

As the third approach, especially given my ethnographic and autoethnographic data, a set of artifacts were gathered as I followed an adaptation of Floch's (2000) propositions to analyze objects, considering the functional, aesthetic, and magical dimensions. As for the previous approaches, Table 11 shows an example of my analytical guide and insights about an object.

Dimensions	Definitions	Example of analysis	Data
Functional	Performance: • Chip emulator • Cloning • Reading and writing • Magnetic sensing • Cryptographic functions • Field detector	This model can copy any 125kHz EM41xx / EM4200 or HID ProxCard II chip ID. Just have to press "read" button closer to the source and "write" closer to the chip or RFID card/badge to have access to doors, computers, among others	 (RFID cloner, personal archive, 2019)
Aesthetic	Esthesic characteristics: • Size • Ergonomic • Hard or soft • Digital display • User interface • Type of protocol • Code/script language	The cloner is small and can be carried inside a pocket or coat. The material is plastic-based, does not have sharp edges, and simple user interface. Requires batteries, only copies EM41xx and HID ProxCard 125kHz tags	
Magical	Effects of meaning: • Hack other person or systems—to be the controller • Machine-like humans vs. human-like machines tensions • Divine or demonic powers • God or Savior Complex	With this device, it is relatively easy to have access and hijack personal information. Also, it gives you the sensation of power and control that is restricted to a few (enlightened, special, miraculous, powerful). The boundary of transcendence and transgression is completely blurred	

Table 11 - Example of an object analysis.
Source: Adapted from Floch (2000, p. 155).

Following my abductive approach (Belk and Sobh, 2019; Peirce, 1935), by carefully studying and comparing the data, I began to find the salience of the cyborgization process and the initially perceived ontological shifting. Although informed by those analytical frameworks, I was trying to conceive concepts and categories freely, whereby the meaning of grinding and the consumption of microchips were entirely entwined. As posited by Tavory and Timmermans (2014) and Timmermans snd Tavory (2012), abduction consists of formulating alternative

explanations and categories "into which observations would fall." As also noted by Roux and Belk (2019, p. 491), "in outlining explanations and categories as researchers, we must also account for our positions and familiarity with particular theoretical fields (Timmermans and Tavory, 2012)." My data analysis stopped when the interpretation and theoretical saturation was reached (Denzin and Lincoln, 2018).

Therefore, to ensure trustworthiness (Denzin and Lincoln, 2018; Wallendorf and Belk, 1989), I went through numerous rounds of discussion with my advisors to have my reflections, analysis, as well as my own experience of having a microchip scrutinized. As the best practice suggests, we, my advisors and I, could be seen as the research team that was responsible for the triangulation, coherence in interpretations, and the consideration for competing theories and explanations (Belk et al., 2013; Denzin and Lincoln, 2018; Figueiredo et al., 2017). Above all, since I had to conceptualize and suggest a new perspective to clarify the ontological condition of cyborgs and their lived experiences, I paid attention to two main criteria to move forward: (1) fit with the data which is grounded in the potential theoretical explanation; and (2) the usefulness of the same theoretical framework to account for social phenomenon in other contexts (Belk and Sobh, 2019).

3.4. Summary of the chapter

In this chapter, I discussed the methods undertaken for this research. It began with a presentation of my positioning in the field, and the research context of grinding that, somehow, became my personal context. To each one of my selected methods for this doctoral study, I presented the steps as well as the challenges faced during data collection and analysis. Given the volume of my dataset, as shown in Table 5, solutions were also presented for securing the trustworthiness and credibility of the data interpretation. Given my abductive approach, I explained the process for emergent theorizing and gave examples of the research guides used to do it, which will link to subsequent chapters, where my conceptual developments will be presented with support from the study participants' emic perspectives.

4.
Chapter: Findings

Both Neo and the grinders resemble the Prometheus portrayed in Goethe's poem: a rebel full of resentment, dissatisfaction, suffering, joy, hope, faith, and the will to be free (Goethe, 1773/2016). Neo, no longer restricted by his former biological condition and structures of oppression, can exert his freedom by transiting between the real world and the Matrix to defy the gods and the odds. In this section, inspired by this transgressive act of transcendence, I present a conceptualization of the transhumanist reading of the Extended Self theory (Belk, 1988, 2013, 2015a): the Interactive Self. As a result, my theoretical claim is: *We, as cyborgs, are not only the sum of our insideable technologies, such as microchips, but also the sum of our interactions with external digital devices to exchange data over time*. As its core, the new proposition is sustained by the process of internalization of the external and externalization of the internal in dialectical and perpetual dynamics. The themes identified during the coding process were grouped into three conceptual components: (1) the Identity-Enabler Object; (2) the iMine Boundaryless; (3) the Data Meshwork. Figure 25 illustrates these components.

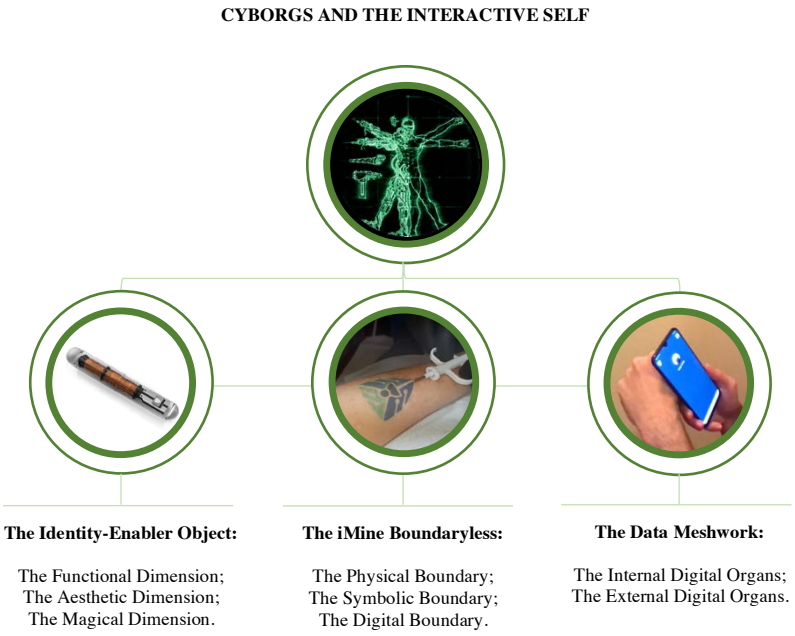


Figure 25 - The Interactive Self conceptual components.
Source: Elaborated by the author.

The research question on *how* is addressed by these three major interactional components and their sub-components. Throughout this chapter, to answer each one of them, I provide examples from the dataset and articulate them with my arguments. Finally, to tackle the *why* research question, I present Sartre's (1957/1968) practico-inert concept sustaining the process of being-in-the-world as a cyborg by perpetually interacting with digital devices to exchange data.

4.1. The Identity-Enabler Object

Everything in this world, somehow, dies: from the intangibility of thoughts, myths, and conventions (Kuhn, 1962; Lakatos, 1976; Lévi-Strauss and Moore, 1974) to the tangibility of food, plastic, and metal (Álvarez-Chávez et al., 2012; Gollnhofer et al., 2019). Even death has been suffering death threats from transhumanists (Grey and Rae, 2007; Hrynkow, 2020; Lee, 2019; Thompson, 2017a; Vita-More, 2019). Accordingly, from a semiotic perspective (Greimas, 1983a), the interesting point here is to consider that for there is death must be life. In summary, we need to be born to die.

In this scenario, challenging the idea of the thing-in-itself (Heidegger, 1967), the passivity, inertia, and lifelessness of an object is the Neo's headjack. The small data port that connects him to the Matrix plays a major role in staying alive or dead, as clearly warned by Morpheus: if you die in the Matrix, you die in the real world. This scene, then, may help us to understand the materiality of the technological device that is "as much force as entity, as much energy as matter, as much intensity as extension" (Bennett, 2010, p. 20). Within this context, the Identity-Enabler Object can be defined as an external object that has the power to change the human ontological condition into cyborgs, as in the case of microchips. The act of creation (Sartre, 1956/1978) may lead us to observe this process even more, not only from the human side but also from the machine's. From the cyborg's perspective, it does not matter if it is grown or made, in a reference to Habermas (2003), since the meaningful point is to celebrate the new ontological condition. Figure 25 illustrate the idea.

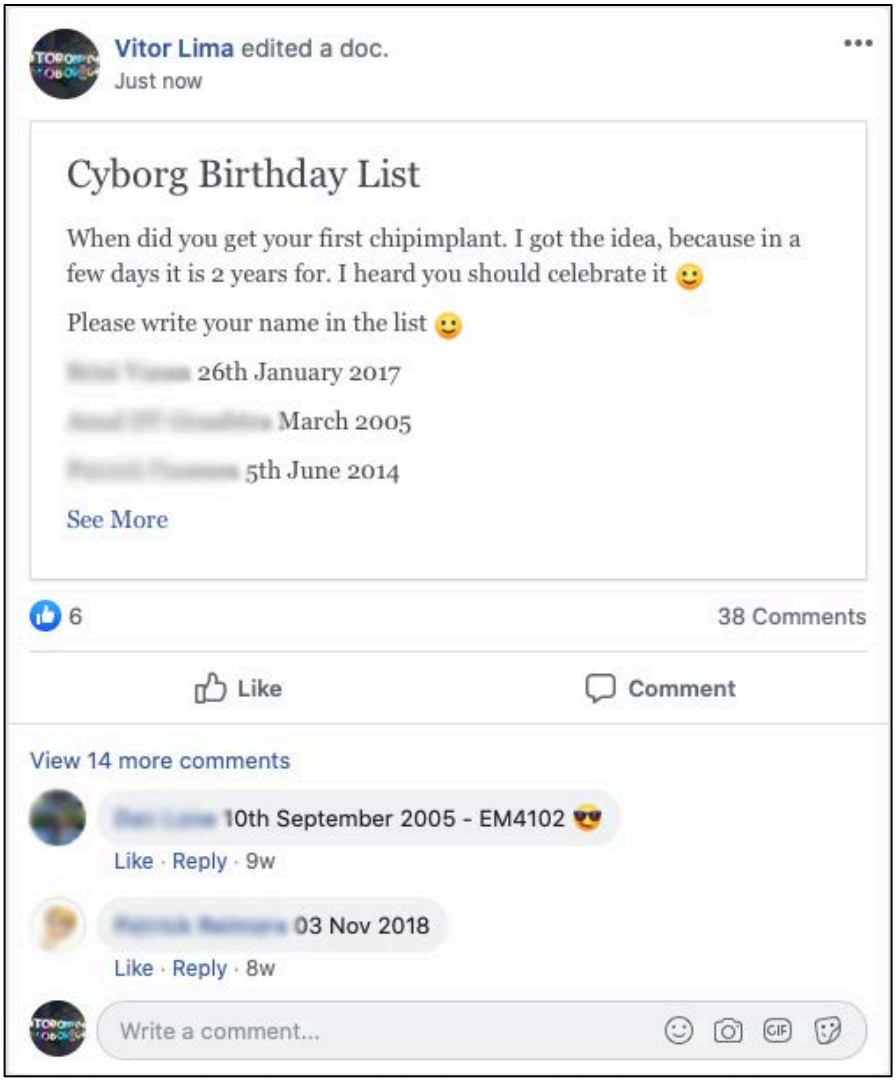


Figure 25 - Cyborg Birthday List.
Source: User 1 (Facebook, 2019).

As proposed by the extension by co-constituted action (Belk, 2015a), a cyborg writes and reads data on a microchip as the microchip supports the hybrid ontological condition of cyborgs. As another example of the agency, power, and life of a non-human, Facebook's AI agents were disconnected after they started interacting with each other in a language that they developed without human input, and no one was able to understand them (Griffin, 2017). At this point, Sartre's practico-inert and worked matter (Aronson, 2020; Butterfield, 2012; Flynn, 2014; Kleinherenbrink and Gusman, 2018) starts to gain even more relevance to the topic on the Extropian Transhumanism and the process of cyborgization. The following

excerpt from an interview illustrates the dialectical dynamics between the inside and the outside, organic and inorganic, technological device and human.

> CyCybo: The project was Tamagotchi CyCybo... and then Facebook was at its peak. That was in 2010. So, the idea was like ... oh so OK ... I stayed in a bed, I had a nasogastric feeding tube, I drank water also by a tube, then you had to see on social media... oh CyCybo hasn't been drinking water for so many days. Then I had to do some alerts on social networks for people to go there and feed CyCybo, play with CyCybo so I don't get bored ... anyway. Like a Tamagotchi [...] it was kind of dangerous (CyCybo, Interview, 2019).

In this case, who or what is in charge of CyCybo's life? Humans or machines? Difficult question given the distributed power between humans and technology. This supposed techno-bioethical dilemma regarding the exercise of freedom is at the heart Extropianism, although not in its morphological form (Bradshaw and Ter Meulen, 2010; Hughes, 2004; More, 1998; More and Vita-More, 2013; Sandberg, 2017). Having this in mind, it is worth mentioning that the Extended Object invokes a flat ontology (Belk, 2015a), as so does the French semiotics with the notion of actants[25]. Although borrowed from Tesnière (1959, p. 102), over the years, Greimas and Courtes (1982, p. 5) stated that actants are "beings or things that participate in processes in any form whatsoever, be it only a walk-on part and in the most passive way," which allows me to argue that it is the same case for a microchip in the process of cyborgization. Based on its functional, aesthetic, and magical dimensions (Floch, 2000, p. 155), microchips have the power to change humans' ontological condition, transforming them into someone/thing else, just as in the Tamagotchi CyCybo project or the Promethean fire.

4.1.1.
The Functional Dimension

Considering the first dimension, the functional one (Floch, 2000, p. 155), consumers often start the process of volitional cyborgization by entering online communities and/or following hashtags. The initial stage of interest in becoming "more than humans" has a primary concentration on the affordances that the

[25] For the sake of clarity during my theorization, I am using the term object instead of actant despite its foundations in the flat ontology and French semiotics' principles.

technological device may provide. Figure 26 shows several models of RFID and NFC microchips with different functions, purposes, and technology.

Figure 26 - The first and second images are cylindrical; the third and fourth images are thin cards. Source: Dangerous Things ([s.d.]).

The interactions between consumers is often full of linguistic mannerisms and other idiosyncrasies[26], as often seen in online consumption communities or group' discussions (Arvidsson and Caliandro, 2016; Belk and Tumbat, 2005; Figueiredo and Scaraboto, 2016; Lima et al., 2109; Muñiz Jr. and Schau, 2005). The following Facebook thread exemplifies the quest for information about the microchip before the ontological changing (User 2, User 3, Facebook, 2020).

> User 2: >> Recommendations for a newby << Hey there - I'm new to the world of RFID/NFC (-implants, but also in general) and a little lost in the jungle of description, frequencies and all this. I'm yet to decide which implant I want to get from Dangerous Things. Do I understand correctly, that the flex-versions (flexDF, flexNT) are basically just flat versions of the xNT and xDF capsule chips? If yes, is the current flexDF then one "version behind" the xDF (https://dangerousthings.com/product/xdf2/)... since it says xDF2? As a first RFID implant, would you recommend the flexDF or the xDF2 then? I'll mainly use it to unlock (IKEA Rothult) doors, I don't care about LED blinking. Maybe for transportation and payment as well, if that's available one day in Belgium. Using the search function, I've read that the flex-chips work better on locks for some people, as it says in the description from Dangerous Things (better performance in range/readability). What are your thoughts/recommendations? (BTW, we're gonna have an implant party in Gent, Belgium, in April this year with @user1. In case anyone is interested, hit me up!).
>
> User 3: Welcome aboard! If you're based in the EU, then definitely check out our store. Means no import fees from the UK 🙂 https://cyborg.ksecsolutions.com/ The flex versions such as the FlexNT and FlexDF are indeed the same as the xNT etc just using a different form factor There's better performance with those over the injectable ones due to the antenna size I would recommend the NExT as a first implant. This is effectively the xNT &xEM combined.

[26] Along the text, several examples relate to different names of products and technical features. Considering my research purpose, there is no necessity in providing a greater definition of each one of them. However, aiming at a better readability of the study, these are the common product's' names: flexDF; flexDF2; flexNT; NExT; TeslaFlex Key Card; xBT; xDF2; xEM; xG3; xHT; xLED HF; xLED LF; xM1; xNT; xSIID NFC + LED; Flex One; Spark 1; Spark 2.

From a semiotic perspective (Greimas, 1983b; Zilberberg and Fontanille, 1998), the consumer is not fully in the *wanting-to-do* state, s/he is still not convinced that installing a microchip is a good choice. Here, I can even argue that this is a moment when consumers struggle and experience a certain level of anguish, as follows (User 4, User 5, User 6, Facebook, 2020).

> User 4: Has anyone here got the thermal sensor chip implant that can tell temperature using a reader? If so where did you put it and how well is it working?
>
> User 5: I have it 😍😍😍 love it. I'm the person in the video from K. Warning: you can't remove this chip easy - it has a biobond coating.
>
> User 4: biobond coating ..... so the body doesn't recognize it as a foreign object but reacts to its surroundings??? Has anyone come up with an app yet to read it rather than having to use the Halo reader?
>
> User 6: he coating makes it harder to remove after it's installed. This is also known as anti-migration coating which helped it moving after install. Generally, it's not really used on any other implants anymore. The frequency that these operate is different so they're not phone compatible
>
> User 4: I was thinking as the rfid has an identity already I need to clear that first possibly but will keep working on it

During my own process of cyborgization, I spent a considerable amount of time researching features, benefits, positive and negative outcomes, as well as thrashing out the meanings and repercussions of my freedom *to have, to do*, and t*o be*. As predicted, in transhumanist roots and contemporary thought, rationality is the bases for any decision that consumers may have to make (Bostrom, 2005; Butterfield, 2012; Clark, 2007; Fuller, 2020; Oudshoorn, 2015; Pelegrín-Borondo et al., 2020; Vita-More, 2019; Warwick, 2014). This more instrumental view on the product and its benefits may resemble the utilitarian view on technology as a tool (Heidegger, 1954/1977), which is not a belief for Transhumanism. It also could lead to the questioning of the necessity of the merger since we have keys, cards, smartwatches, and other objects, with different degrees of digitalization, that can perform tasks in a similar fashion (Hou et al., 2017; Humayun and Belk, 2020). It is interesting however, to notice that the types of functionality and the rational thinking for becoming a cyborg are mixed up with distinctive feelings and psychosocial effects (Buchanan-Oliver et al., 2010; Buchanan, 2011). As highlighted by Lima et al. ([s.d.]), it is not possible to conceive of a unique reading of the morphological freedom for cyborgization, placing consumers either

experiencing psychological states of stress (Mick and Fournier, 1998; Robinson and Arnould, 2019) or being influenced by macroscopic structures (Kozinets, 2008; Kozinets et al., 2017). The next passage from an interview illustrates the case (Cybug, Interview, 2018).

> Cybug: So, if you think about it, you already have an exoskeleton, I've read a lot about it, that is, you can take senior people that no longer have firmness in the leg ... it's really a concept of symbiosis. I think you end up doing this. When you put the chip in, they consider you as a cyborg, in fact because you cannot remove it. So as you don't remove it, there's a machine in you [...] it is very embryonic, it is very early [...] It is subcutaneous, it is really under the skin even [...] it's crazy: you're sitting on a counter, in a convention center, the person and place didn't have that high level of hygiene, but obviously he used a glove, a protective barrier, he used alcohol... so you see... he ends up inserting something into your body that maybe with little caution.
>
> Me: And were people there worried about it?
>
> Cybug: No ... I was very curious looking at and finding the implantation that was happening cool, but they wouldn't do it at all. And there were some crazy people who really did it and were finding it cool.
>
> Me: So.... do you consider yourself somehow crazy because of the chip? You mentioned that your wife complained about it.
>
> Cybug: No... No... It's very nerdy, right. And then you obviously have people from the nerd culture who think it's great, there are people who think it's absurd. I am in the middle of it. As I came from technology, I work with technology, I had been studying this for some time, I put it in as I don't care. It was natural. It was natural for me. See... You can write data, then here... add to save. Then you choose the options: open text, URL, open an application, play or send video [...] there are several commands you can have. Several devices can read the chip with the command you configure [...] nothing philosophical, I was reading about chips and wanted to try some things. It must have a function and utility.

Even if a Cybug's lived experience is initially portrayed as a rational choice based on instrumentality, it is possible to observe the difficulties in the positioning and the relation of the "I" with the "Other". Expressions relating to craziness and sanity in addressing the techno-human symbiosis further highlight the psychosocial effects that the microchip is capable of stimulating. As suggested in the semiotic square (see Figure 2), the ontological placement of volitional cyborgs and the way consumers navigate through meanings, clearly demonstrates that values about humans and machines can be conceived as unclear (Case, 2014; Chorost, 2005, 2011; Clark, 2004; Hables-Gray et al., 1995; Schau, 2018). Nevertheless, one thing about Bennett's (2010) view on the power of objects, is their capacity to act and impact other materials, thereby producing effects in the world. The Gnostic-inspired functional dimension of the microchip is intrinsic, where it is not, it is

sometimes overlapped with the second dimension of the object: the aesthetic (Floch, 2000, p. 155).

4.1.2.
The Aesthetic Dimension

Considering the esthesic characteristics of the microchip, the first aspect that is discussed is the size. Since the process for installation is based on injection with a needle or scalping, consumers often question the size of the product as well as the dimensions of the installation materials. The messages illustrate concerns, fears, desires, pleasures, and other complex physical and emotional manifestations (User 7, User 8, User 9, User, 10, User 11, User 12, User, 13, Facebook, 2019).

> User 7: The led and XLED and XM1 needles are SO big 😖🤯 I leave the bevel decisions on the hands of my piercer. I'm in charge of the moaning and whining and laughing hysterically when it's all done.
>
> User 8: So I just got my X3 Elite from "i am Robot" now omg the kit comes with lots of stuff like stickers an RFID protector. It also comes with a rfid sticker that lights up as signal improves. Also some fancy babdaids and some what look some disinfectant spray. It came with some stril pads and gauze. Omg I looked at the needle and this one scares me i injected several of the ones that dangerous things sells but this thing is giant and intimidating. I'm examining it now to make sure it's not a joke and the size needle was actually required.
>
> User 9: I walked in at one of their partner piercers and without anesthesia, I only had a bit off a pressure pain for an hour or so and that was it. It seemed to take quite a lot of force to get that 3mm diameter needle through my skin.
>
> User 10: I'm getting an xLED and an xG3 put in today. Only mildly freaking out. Lol
>
> User 11: the freak out is the best part.
>
> User 12: Just wait until you see the xG3 magnet needle.
>
> User 13: That needle is a beeeeauty.

The current esthesic characteristics of microchips are an outcome of years of research, self-experimentation, and bleeding for the community (Biohack.me, [s.d.]; Delfanti, 2013; Doerksen, 2017; Wexler, 2017; Yetisen, 2018). The following discussion exemplifies the technicality evolved during the process of conceiving the product, as well its correct manipulation (User 14, User 15, Facebook, 2019).

> User 14: you can see the difficulty he has getting past the back edge of the bevel... this is because of the skin piling up inside the needle as the point makes the initial incision.

> User 15: That's why it should be installed bevel down? 🤔
>
> User 14: yes. Bevel down does not collect skin inside the needle during incision. Think of it like a snow shovel. You use it like normal and snow collects in the shovel and stays there, and you can only move the shovel forward so far before it's inundated with snow and you can't possibly move the shovel any further forward. Now imagine you try again with the shovel upside down and you just push it under the snow... you could just keep going because the snow moves up and over the top of the shovel as you burrow under the snow... you want bevel down because you're burrowing under the skin, not trying to shovel it up into the bevel.

An example of an unexpected and undesirable procedure outcome was highlighted during an interview, as follows (Cybug, Interview, 2018).

> It's here. Between the index finger and the thumb. So, it is really subcutaneous... it is right under the skin. And that's what I talked to you about. When he implanted it, he ended up hitting the muscle. So, he got it wrong. And that ended up disturbing and interfering the performance of the chip [...] this reading error happens because it is inside the muscle. The reading supposed to be quick. And I saw people who put it before, and it worked.

Although references to its design might be charged with intense and dysphoric reactions, there are several posts picturing the microchip as an object to be admired. The microchip, then, is the protagonist of a euphoric narrative. It is the object of desire, contemplation, and a reference to contemporary fetishism (Belk, 1991, 2015a; Fernandez and Lastovicka, 2011; Humayun and Belk, 2020; Simon, 2019; Tirosh-Samuelson, 2012a).

The second aspect discussed refers to colors and the way microchips glow under the skin. Technological devices with similar features, such as the NorthStar (see Table 4), are bigger in size and are visible even with lights off. Somehow, they are "less naturally blended" with the body. However, new models are the size of a grain of rice, thus imperceptible unless glowing. The focus on the light, and not on the skin distortion given the size, reinforces the notion of the desired "natural embodiment" of the microchip. Figure 27 shows a collage of photos and comments representing the context.

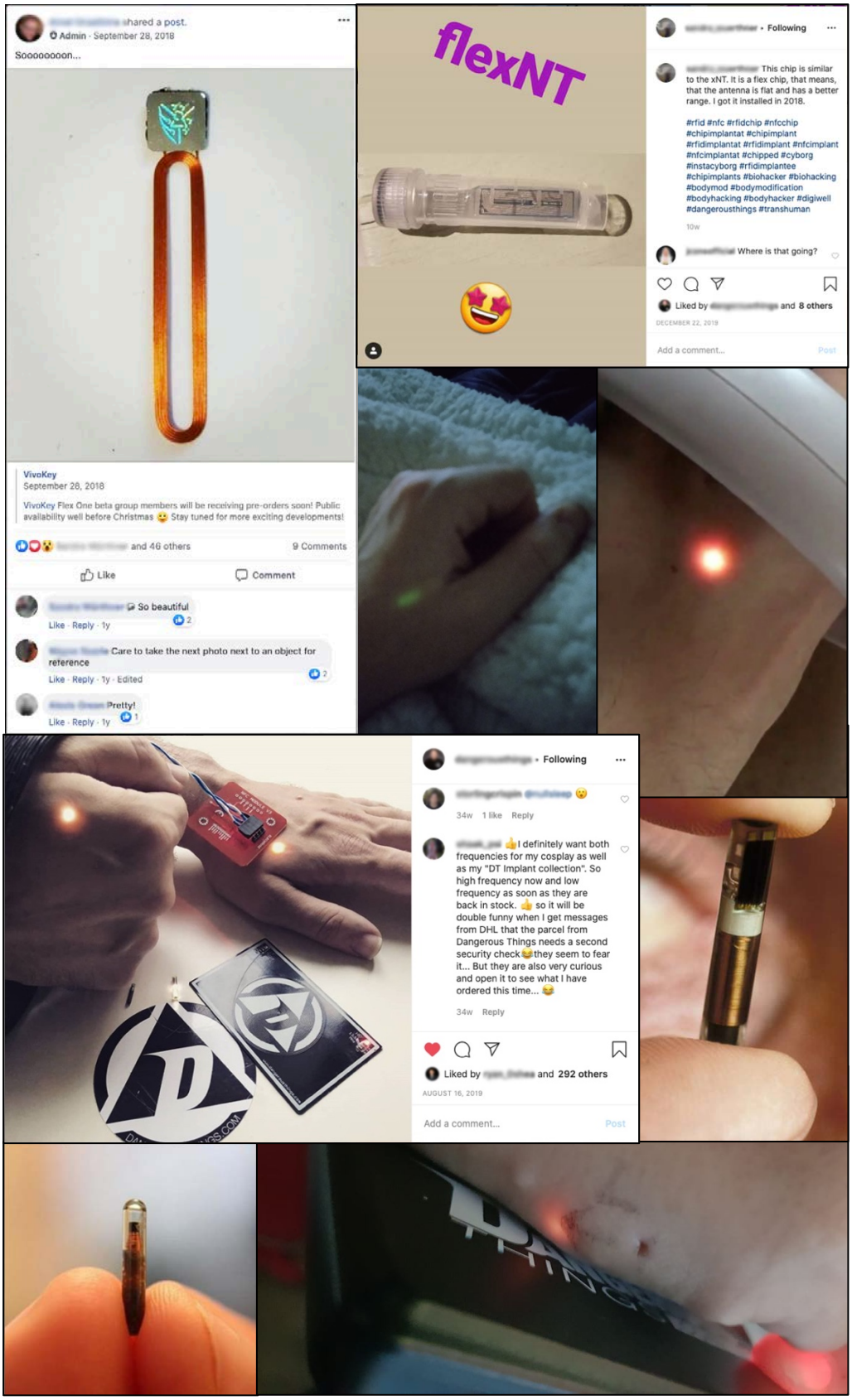


Figure 27 - Collage of photos and comments about the microchip.
Source: User 15 (Facebook, 2018); User 16 (Instagram, 2019); User 17 (Instagram, 2018); User 18 (Reddit, 2017), User 19 (Facebook, 2019), User 20 (Instagram, 2018), User 21 (Forum, 2017), User 22 (Instagram, 2020).

Possibly the apparent obviousness of functionalities and esthesic characteristics could lead to precipitated inferences or even conclusions for volitional cyborgization. As advocated by techno-progressive extropists, Morpheus, Doktor Sleepless, and grinders, merging with technology is rational, obvious, and rightful agreed our freedom to transcend, even if by means of transgressions (Duarte, 2014; Ellis, 2008; Kurzweil, 1999; More, 1998; O'Shea, 2019; Vita-More, 2019). At this point, during my autoethnography's second stage (i.e., *#WTF am I doing?*), I must confess that I was already convinced that the human-tech merger would suffice my desires to become someone/thing else by means of technology consumption, just like Neo and the Iron Man. As shown by Ruvio and Belk (2018), our possessions, regardless of being physical or digital, help us in dealing with existential conflicts, and operate in various fashions. These struggles related to the self can also be associated with archetypal manifestations (Jung, 1954) as well as myths (Lévi-Strauss, 1955, 1978).

4.1.3.
The Magical Dimension

Having in mind the third dimension of an object, the magical one (Floch, 2000, p. 155), consumers' lived experiences became abstract and, somehow, sustained the previous dimensions in a magical or sorcerer-like manner. The next brief excerpt of an interview sheds light on this.

> For function and utility reasons, I told you the most useful: lockers and starting the car, OK. But there is also this article I read about hacking other person's phone because you have that possibility. You saw here that I wrote a code here to be transferred by approximation. So, there are a lot of people who leave the smartphone NFC on, Wi-Fi on, Bluetooth on... it's another vulnerability to be exploited (Cybug, Interview, 2018).

Although succinct and in no way charged with mysticism, it is an extremely representative example of cyborgization practices and their relations to the powerful source of meanings residing in the microchip. Exploring the effects of meanings of several parts of the dataset focusing on the fundamental level of the GTS (Greimas and Courtes, 1982, p. 134), the primary opposition between the controller and controlled is one of the most significant. Without the plug, Neo would never have learned all martial arts in just a few hours, nor blend with the Matrix, or save humanity. Returning to Propp (1928/1968), it is the magical sword

that allows the heroic character to be the heroic character. As emphasized by Belk (2015a) and Fernandez and Lastovicka (2011), contagious magic is often explored in consumer research as an almost sacred transference of meanings to or from the object. However, specifically in this case, what is seen tends to seem much closer to a form of contamination (Belk, 1988; Douglas, 1984), which is negative, rather than a simple and magical data transference. The next post excerpt from a Forum exemplifies the idea (User 23, Forum, 2017).

> User 23: "Magic" Mifare NFC implants
>
> Last year I released the cloneable RFID implants, but why stop at RFID cloning? Being able to clone NFC chips is the next logical stop. Those of you who follow me on twitter will already know I've been working on these for a while now, but they are finally finished, so I thought people here would interest. Mifare Classic chips are an older sort of high frequency NFC chip, they only partially meet the NFC standards, so some phones can read them and some can't, for this reason I would normally recommend people get a NTAG216 NFC implant because it fully meets the NFC standard and so is readable on all NFC devices.
>
> However, Mifare Classic is very widely used, so it would be useful to have an implant which could copy existing Mifare Classic cards. Dangerous Things have sold vanilla Mifare Classic implants in the past (although they are currently out of stock). However, these chips have a hard coded UID, if you want to use it to 'clone' an existing Mifare Classic card, you could only copy the data on the card, not the card ID (UID). Mifare Classic cards with changeable UIDs have been available for a while now, but in credit card sizes, not an implantable form factor. In hacker circles they care called "magic" cards because they bypass the manufacture restrictions. I wanted to fix this situation and make a Mifare Classic implant which fully supports cloning.
>
> I got some "magic" ICs and cut them down to fit in 3mm diameter bio-safe borosilicate glass vials, I then attached a coil antenna around a ferrite rod (this is how all antennas in implantable chips are made), then sealed the tube. The implants were then placed in 9.5-gauge needles and sterilized in medical sterilization pouches.

As a vampire has to bite and suck the blood of his victims to turn them into servants, hackers need to invade and contaminate people's digital devices to have the same outcome (Coleman and Golub, 2008; Gilmore, 2009; Hauskeller, 2015; Hirschman and Holbrook, 2011; Levy, 2010). By following a Konami Code-like practice, the hacked object can hack another object, transgressing countless boundaries. The subsequent thread shows a discussion about it (User 24, User 25, User 26, User 27, Facebook, 2017).

> User 24: Not sure if I should love this article or hate it... Jezzz... wtf... it reads as if he was cooking Crack in a backyard kitchen: "FORBES.COM - Hacker Implants NFC Chip In His Hand To Bypass Security Scans And Exploit Android Phones"
>
> User 25: Yep sure, letting someone scan your NFC implant requires the same amount of trust that is required to hand someone your phone to put in the digits for his phone number. No

> news here. While entering my phone number on someones phone I could easily type in a download link inside a browser. With an NFC Implant it's just a few seconds faster. But still, its the trust letting someone access your device. Nobody would get anywhere near enough to my phone to scan his NFC implant. Usually a distance of a few mm is needed. The only thing left is: Its really useful to get data into restricted areas. But getting data out of a restricted area is way more difficult. Restricted areas don't usually come with NFC writers don't they?
>
> User 26: I guess if your phone is in your pants, with the backside away from your body, he just needs to pass by very close and you'll get his "bad link". He just use the implant, because it's invisible and so nobody even would think about that. All what comes after is just the result of a very fragile android system with poor privacy settings.
>
> User 27: I love it... Hack the planet!

The magical aspect of the microchip goes back to the myth of Prometheus, his fight with Zeus, and the stolen fire, which is well-highlighted by Dougherty (2006, p. 18):

> fire and the technology that it makes possible are at once the source of civilized life, giving mankind freedom from the constraints of nature – warmth in cold winters, light in darkness, cooked not raw food – and the historic tools of devastation and destruction [...] Fire provides mankind with the means, both material and spiritual, to develop all those technologies and skills that mark his existence as superior to that of the beasts.

In the case of microchips hacking situations, we may be able to compare this technology with the Promethean fire: it controls and can be controlled, it gives and takes lives, and it brings light as well as darkness, all at the same time. Would hacking and hijacking someone's smartphone using the NFC microchip be a modern version of black magic, sorcery, and even slavery? In this case, could the power of the object establish asymmetries between humans and non-humans, in reference to Haraway's (1985) and Wolfe's (2018) criticisms of several forms of oppression given ontological dualisms? By being endowed with the microchip's power, would machine-like humans be transforming into god-like humans? During one interview, the somehow god-like condition emerged several times. The next brief quote is an example: "The microchip technology is not that new. I can create life in my lab... I can make, for example, a brick from a fungus. I can mix bacteria with some electricity conductor and create something, as I did for the company XYZ" (CyCybo, Interview, 2019).

As emphasized by Mick and Fournier (1998, p. 128), a technological device is a "double-edged sword" given its ambivalent nature that evokes confusing emotional and behavioral reactions. For some, only gods have the power to control the way things should be (Belk et al., 2020; Gallaher, 2019; Hamilton, 2017; Mayor,

2018; Peters, 2018). Although the line that separates gods from demons, and the sacred from the profane, is not easy to establish, a common point in the West is the fear of being punished for some transgression by the omniscient, omnipresent, and omnipotent deity (Belk et al., 1989; Douglas, 1984). Nevertheless, as Jenks (2003) suggests, the transgressive behavior is the complement of the transcending one. The following excerpt from an interview highlights the tension and blurred boundaries (CyRa, Interview, 2018).

> Me: Could you tell about me your concerns regarding people's perception?
>
> Cyra: As you may have guessed: yes, most people think I am completely crazy and find the chip strange. I remember that, a few weeks after the implant, I discovered that I was the subject of a somewhat obscure forum on conspiracy theories. Not to mention the constant quotes about "Mark of the Beast" and things like that. However, it is worth remembering that even today there are people who do not like piercings, for example; therefore, even when biohacking becomes popular, there will still be resistance on the part of the more conservative part of society [...] Perhaps health safety rules will be established for those who apply it, but nothing that will stifle the scene or something. As for religion... Look, I think it's very funny to show my microchip to a religious extremist and I will continue to do it. With all due respect.

As shown in Figure 28, a 2017 video from Youtube and its updated comments highlights concerns about the supernatural powers of the microchip (User 28, Youtube, 2017).

Figure 28 - Mark of the Beast? Nevada Senator moves to STOP forced RFID chip implants HD.
Source: User 28 (Youtube, 2017).

Next, there are a few comments about the video (User 29, User 30, User 31, User 32, User 33, Youtube 2017).

> User 29: RFID chip is your passport to Hell.
>
> User 30: God bless her.
>
> User 31: a false utopia under satan in the satanic new world order.
>
> User 32: God help us I would not allow my family to get that.
>
> User 33 Have a second thought before implementing this chip and by looking at the current situation covid 19 n falling of economics drastically and food supply is getting less and automatically it will leave people with no choice but to accept the mark.

Therefore, I wonder: if the Identity-Enabler Object is as powerful as it is (Belk, 2015a; Bennett, 2010), which door will open for defiant cyborgs as new forms of life? That of heaven or hell?

4.2.
The iMine Boundaryless

How many lives do we have to master Sartre's bicycle? How long does it take to have full control of a new AI-based app? How do we master moral behaviors in a social context, and do transgressions not happen? My only answer, in agreement with Sartre (1956/1978, p. 592-593) is: sometimes we cannot do it, not even in an entire lifetime. Differently from Neo, who is The One—a quasi-archetypal manifestation of Christ (Hancock, 2016; Jung, 1959a), humans have limits and imperfections, despite the *Imago Dei* narrative. Although each taxonomy might be considered an outcome of social conventions (Foucault, 1980; Haraway, 1985; Lakatos, 1976; Latour and Woolgar, 2013), the process of cyborgization starts with the biological human body as genetically conceived by nature (Hables-Gray et al., 1995; More and Vita-More, 2013; Ranisch, 2020; Sandberg, 2017; Sheehan and Sosna, 1991).

Therefore, on the one hand, the Extended Self (Belk, 1988) has mastering possessions as a form of symbolical incorporation into the self, dissolving the I/Mine boundary. On the other hand, from the Extended Object perspective (Belk, 2015a), the process of extension by association is also a symbolic way to transfer meanings from one object to another. Now, from the Interactive Self view, the

process of incorporation & extension is simultaneous due to the penetration of the physical, symbolic, and digital boundaries. This is the underlying conceptualization of the iMine Boundaryless in my theoretical proposal. Those processes challenge several taboos and norms: from sociocultural, ethical, governmental, technological, biological to religious. As mentioned during one of my several talks at the ethnography stage: "Wow... Chip? That's too much. It's weird. Fuck off... it's your body. You have the right to be whatever you want. We're free. I would try Ayahuasca and see if something happens with your senses and the chip. Hack the fucking world." (Informal talk 1, Meetup, 2019). After all, in the quest for freedom and transcendence, the grinding, as claimed by Doktor Sleepless, is *with* the body and *to* the body, and as transgressive as possible.

4.2.1.
The Physical Boundary

Considering this process of mastering, the morphological freedom (Bradshaw and Ter Meulen, 2010), as well as the control over our material existence (Lima et al., [s.d.]), was emphasized during an interview, as follows (CyCybo, Interview, 2019).

> Me: How about nootropics? Could you tell me about them?
>
> CyCybo: No. I don't take any medicine. I don't even take painkillers. I don't take medicine for anything. Only my dentist who makes me take antibiotics when I have to pull out a tooth. But other than that, nobody makes me take medicine [...] this is what Western medicine does: you go to the doctor and delegate a decision about your body to him. I think it's very heavy for both of them. First, because that person does not live in your body. Second is that it takes away from you the power over yourself [...] I think there is a point here that medicine takes away your power over your own body. Perhaps the biohacking community has been reclaiming the ownership and control of the one's own body.

As in most rites of passage (Gennep, 1909/1960), such as religious ceremonies (Bonsu and Belk, 2003), there is a set of objects that promote the clashes between distinct meanings. In cryonics procedures (Radin, 2017), for instance, the sacred blood and body fluids are replaced with a technological cold liquid to keep the human between the world of the living and the world of the dead. However, since life is a battleground and we do not know if "good will overcome evil or joy defeat pain" (Jung, 1969b, p. 85), the challenge is, thus, to avoid an uncontrollable Frankenstein-like outcome (Koplin and Massie, 2020). Despite the

agony, affliction, traumas, complexes, and a deep state of ambivalence that emerged in most of my interviews, the centrality of control over life by merging with technology is undeniable. The first principle of the Extropist Manifesto relates precisely with this Sartrean notion of mastering. According to extropian transhumanists:

> We desire the technology and understanding that allows us to continually transform and augment the human body until we attain radically expanded lifespans, super-human wisdom & physical/neurological powers beyond anything we can imagine today. We intend to improve our culture & environment until we've instituted a fluid society that guarantees a euphoric existence to all those who desire it (Humanity+, 2010).

In this regard, to begin with, the consumer has to purchase the microchip and experience a type of excitement similarly felt when we were waiting for Santa Claus to bring us those desired gifts (Belk, 1987). The next thread shows the excitement on fulfilling the state of lack (User 34, User 35, User, 36, User, 37, User 38, User 39, User 40, Facebook, 2018, 2019, 2020).

> User 34: Yeah, just received shipping notifications about my VivoKey. Thx, AADT, i am really excited!
>
> User 35: Me too :) I'm so excited :) 10 days from Austria to the USA :) I shipped my microbankcard to AADT 😍😍😍 Hopefully it will work :)
>
> User 36: xG3 should be shipping soon yeah? 😁 If so does anyone happens to know definitively when they will be shipping?
>
> User 37: Just bought this <3 I will ship the card on Monday :) AADT <3 <3 <3
>
> User 38: Really fast Should arrive today 😁 Faster then shipping a parcel from Austria to Germany 😁 Always interesting that it goes via Germany and Slovakia.
>
> User 39: Shipping is on track! can't wait!
>
> User 40: So excited installation date is next Wednesday!!!!! The docuseries premiers on May 1st! Info soon!!!

From the Extended Object perspective (Belk, 2015a), the movement from a commodity stored in a warehouse to a singular item to be a meaningful element of a consumer's story, highlights its social life (Kopytoff, 2013) and powerful agency (Bennett, 2010). By adding the product in the online cart, paying for it, tracking the shipment, sharing its status on social media, and then receiving it can be considered part of the singularization process of the microchip. Consequently, the unboxing practice and social reactions on receiving the package (Wang, 2019) are

reinforcements of the object cathexis for the self (Belk, 1988, 1989, 2013; Desmond, 2012). The collage of posts in Figure 29 shows the moment.

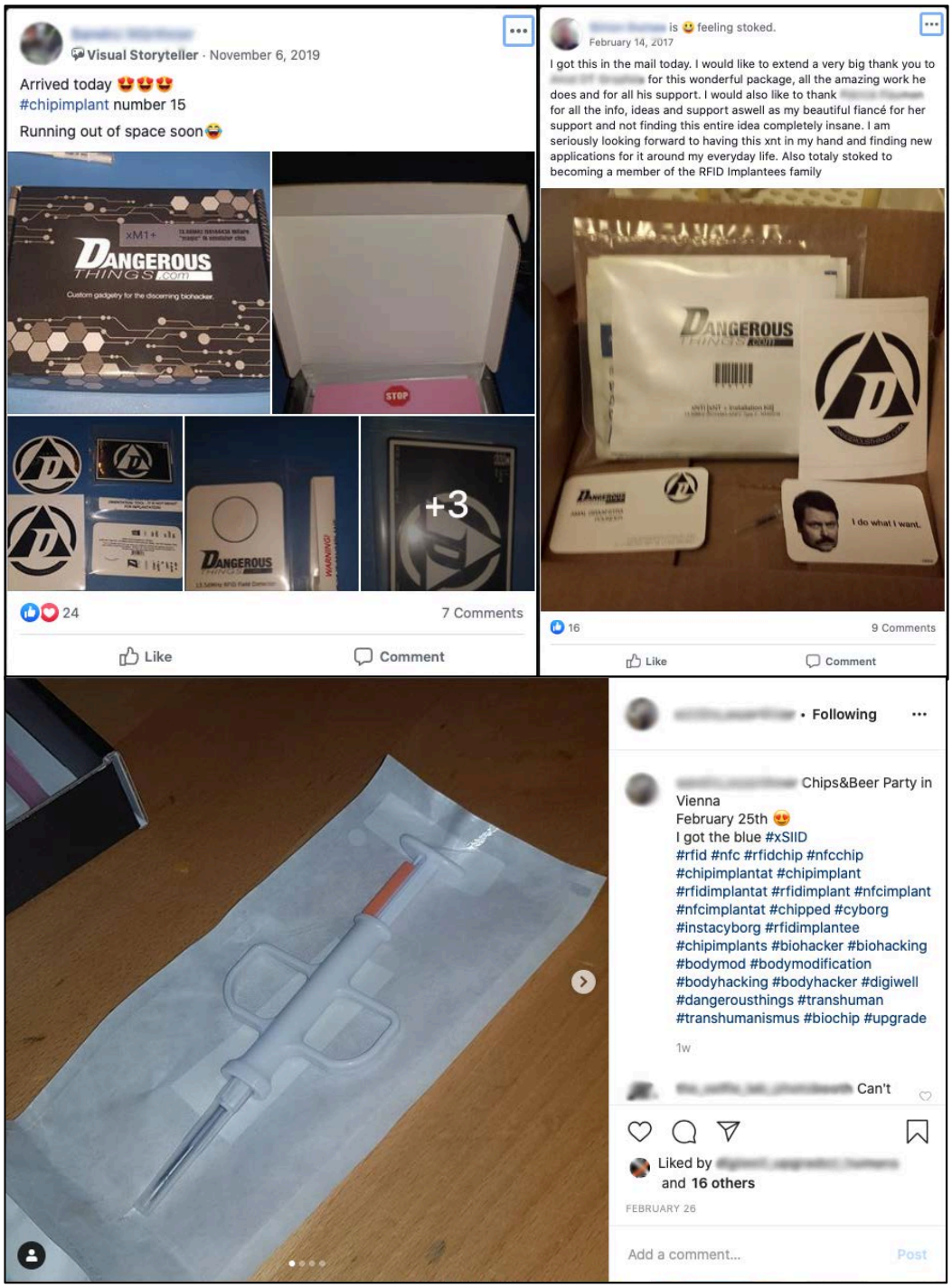


Figure 29 - Collage of posts and comments about the arrival of microchips.
Source: User 41 (Facebook, 2019); User 42 (Facebook, 2017); User 43 (Instagram, 2020).

Once the microchip arrives, some rush to the nearest tattoo & piercing or body modification studio, some take a bit longer to do it. Given the specificity and type

of procedure, it is usual to find someone unwilling to do it. As an example, in British Columbia, Canada, the set of governmental regulations for the practice of body interventions (British Columbia Ministry of Health, 2017) are not the same as in Rio de Janeiro, Brazil, (ANVISA, 2008), and other countries. Somewhat in alignment with Sartre (1957/1968, 1960/1976, 1985/1991), there is "the context of the context" constraining consumer's agency (Askegaard and Linnet, 2011). The following message illustrates the situation.

> User 44: User It's really annoying living in Austria. Always waiting for holidays to get chip implants. 🤮🤮🤮🤮🤮🤮🤮 I hate this awful piercing and bodymod rules here - it's stoneedge 🤮 Piercing needles: only up to 2 mm are allowed. Hopefully I can go in February on holiday - flying to Germany (User 44, Facebook, 2019).

> User 45: i live in the uk with a nanny government where even the most basic anethetics are prescription only and i need some help making an inject-able solution any help would be great as i'm planning a few personal mods that i will need to replace every 2 years i would also like it to contain a Vasoconstrictor too thank you (User 45, Forum, 2019).

> User 46 (Reply to User 45): Concentration of lidocaine from OTC options is certainly an option, although contaminates (Usually intentional ones through the manufacturers, FDA, DEA, etc) are a major concern so do intensive research on all of the components and you're knowledgeable in the science behind the extraction methods. Biochem is my interest and my hobby, so i'll be happy to help you. However i'd like to point out that benzocaine is a very different compound than lidocaine, watch out for compound syntax. There's also plenty of deep web options for you to buy medical grade lidocaine and equipment, although you should probably pm me if you're interested for further information (User 46, Forum, 2019).

In this scenario, to become the desired cyborg, the online community and discussion forums are the main sources of referrals for professionals that work with chip installation. Figure 30 from a Youtube video illustrates the DIY cyborg practice.

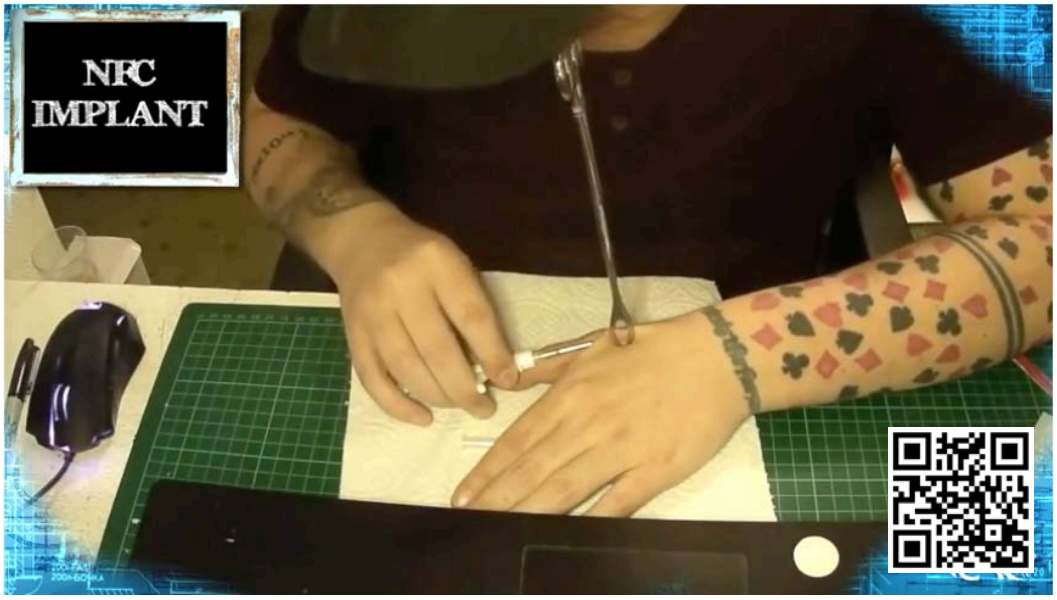


Figure 30 - Self-installation.
Source: Rorrison (2019).

The following comments are from the abovementioned Figure 29 (User 47, User 48, User 49, User 50, Youtube, 2019).

> User 47: Cool! What will you do with it? also does it hurt a lot? the needle looks quite thick.
>
> User 48: I use it for a bunch of magic, and it hurts about as much as a bee sting.
>
> User 49: This is an extremely useful video; thank you for recording and uploading! I am about to self-implant for the first time. I've had 4 implants done for me but wanted to do this next one on my own.
>
> User 50: Thanks for the inspiration.

There is always a Konami Code strategy to be applied to master or circumvent a given restraint. To some extent, I may say that the coping mechanism would be influenced by the burning desire to be or to become a cyborg. That is, you can fly to another country, use anesthesia, or even self-install, to equalize that state of burning from the inside for something (Belk, 1999, 2018a; Belk et al., 2003; Chaudhary et al., 2019; Desmond, 2012; Ellis, 2008).

4.2.2.
The Symbolic Boundary

In my own case, the professional referral came from Amal Graafstra's company, which turned out to be the best option given his social status within the

grinding scene. The milestone for the installation during my journey through the rabbit-hole was in Barrie, Ontario, Canada. From this moment, the inside and outside, as well as the physical and symbolic boundaries started overlapping. The dissolving ontological boundary from humans to cyborgs is accomplished by the encounter between blood soaking needles and the flesh, veins wrestling with microchips, and then ACGTs being digitized to 010101s. Figure 31 illustrates the moment.

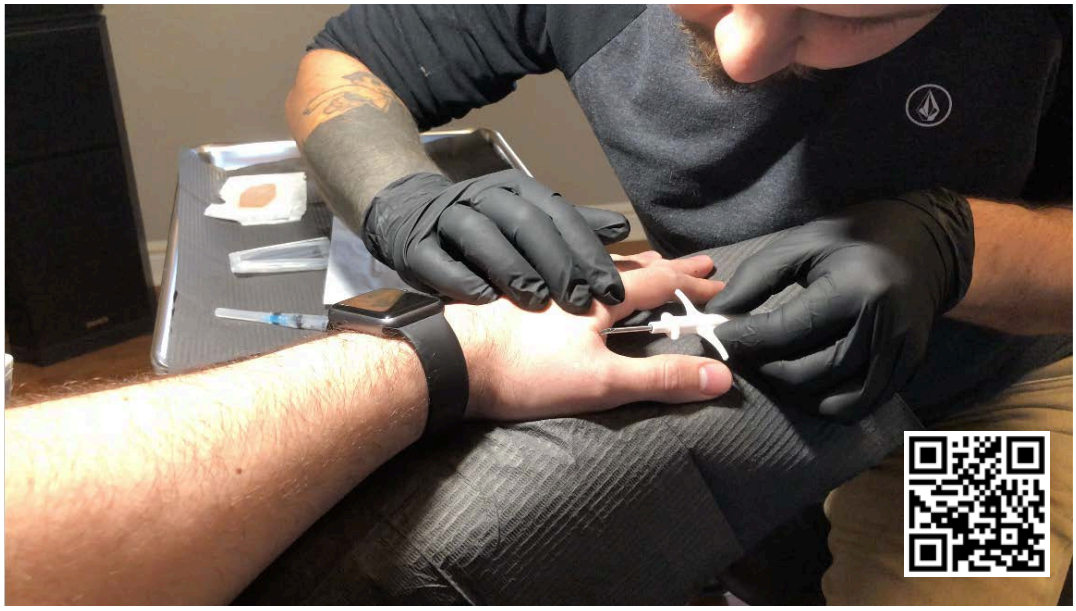


Figure 31 - My NFC microchip installation procedure.
Source: Personal archive (2019).

Pain and confusion: what was outside is inside, and what was inside is outside. This is the material body starting its fight against the foreign object (Breuner and Levine, 2017). This is also the immaterial mind overflowing with every type of complex (Desmond, 2012; Jacobi, 2013), possible stigmatization for transgression (Jenks, 2003; Latimer, 2017), supposed reasoning (Murata et al., 2019), the sense of humanness (Castelo et al., 2019b; Lima et al., [s.d.]; Sheehan and Sosna, 1991), and faith contradictions for the profanation of the sacred human body (Belk et al., 2020, 1989; Douglas, 1984). Right after having the installation, the third epiphanic moment of my autoethnography happened (i.e., *#WTF did I do?*), which has the following excerpt of my personal notes.

> Dude... I just came to another city, I went to a tattoo studio, I was pierced by a considerably thick needle, by a guy that I spoke to twice on Facebook and email. Now I have a microchip

> inside my body. WTF did I do? I'm screwed... what will people think about me? Oh! my grandmother... God... I don't think I'll even say anything. Dude... what a crazy thing. Did I research it properly? And what about the chance of it breaking by a wrong punch during my karate practice? OK... calm... breathe... it's bleeding now, but my healing is good. I'm still under anesthesia, but I'll take something light just in case. He said that if I need to take it out for any reason. and just have to call him and schedule another appointment. A simple cut, some stitches, and everything will be fine. What if I can't use it with the devices? Fuck, fuck, fuck... Too late. I need to calm down... seriously. I'll burn in hell... totally. Am I weird now?? What the hell... I cannot freak out because of it in front of my wife... she's already bought the idea. Oh, fuck (Personal notes, 2019).

Based on my words and also on several mentions to different types of internal and external dialogues about *to have, to do*, and *to be*, the multiple facets of the self are unquestionable (Belk, 2013; Ruvio and Belk, 2018). Figure 32 is a Facebook thread also highlighting the symbolic aspect concerning to be or not to be a cyborg. Although it may suggest a certain level of sarcasm, the whole discussion has a substantial symbolic dimension.

Figure 32 - Discussion about symbolic and social tensions.
Source: User 51 (Facebook, 2020).

Conversely, given the esthesic capacities of consumers and the esthesic characteristics of the microchip, the alteration of our proprioception and state of perplexity is temporary (Hughes, 2013; Landowski, 2004; Tbalvandany et al., 2019; Umbrello and Sorgner, 2019). The following excerpt of an interview details the process (CyberTo, Interview, 2019).

> Me: Could you tell me about the characteristics of the chip?
>
> CyberTo: That's what I have on our website. It is the size of a grain of rice.
>
> Me: Interesting... Did you feel it somehow? Can you describe that sensation?
>
> CyberTo: Nobody feels the implant, for instance. It stays inside your body and you don't feel it, you don't know it's there. Excluding the healing period when you will feel, because you are healing and the body is creating a sort of encapsulation with fibrous collagen around the implant, apart from that moment you don't feel it inside you. Unless you press to find out if it's there or show it to someone, but you don't realize it's there.

From a sociosemiotics perspective (Landowski, 2005), CyberTo, as well as other cyborgs, experienced a regime of interaction based on mutual and equal adjustment. In other words, as our lungs and diaphragm work together to inhale and exhale, the body and the microchip work together to perform the extension & incorporation of data. There are no more boundaries between the metal and the flesh, the headjack and NEO, the Matrix and the real world.

At this point, I can argue that this new body part has been described as the most cathected in the cyborg identity constitution. The centrality of foreign objects to the self is highly significant (Belk, 1988), just as a new organ after transplantation could be (Belk, 1992; Bradford, 2018; Branco-Illodo and Heath, 2019; Lai, 2012; Walker, 2019). As mentioned by one cyborg in a post, "it's there [sic] performing essential functions, and you do not realize it" (User 52, Facebook, 2018). The topic also emerged during my interview with CyberTo (2019):

> Me: How would you feel if you have to take it out? Do you see yourself without it?
>
> CyberTo: Oh no. For me to remove it only if it is to put another one in the same place [...] I don't say remove it. I wouldn't do it actually. I would put another one somewhere else on the body or the other hand [...] I don't see myself taking or updating it at least for the next ten years [...] my whole life is connected with it.

It is also possible to illustrate the notion of cathexis based on the notion of losing possessions, and the subsequent state of grief (Belk, 1988, 2013, 2016b; Israeli, 2019; Molesworth et al., 2016; Ozansoy Çadırcı and Sağkaya Güngör,

2019). In the case of cyborgs, the expression bricking refers to failure of or damage to the new body part, as mentioned by User 53: "Pretty sure my xEM is bricked ??" (User 53, Facebook, 2018). Usually, after a brick episode, it is necessary to replace the useless microchip by disinfecting the area, making a small incision with a sterile scalpel, and pushing it out. Then, it is possible to install a new one in the same place. Figure 33 illustrates the situation.

Figure 33 - Photo of a microchip removed after bricking, with sad, dysphoric but empathic reactions. Source: User 53 (Facebook, 2018).

Here, if we consider how the embodiment modifies the way the world is lived and experienced (Merleau-Ponty, 1981), we may assume a *decyborgization* situation, in a reference to dehumanization (Castelo et al., 2019b; Haslam, 2006). Having this phenomenological account of the lived experience in mind, I wonder if: from the grinder perspective, removing the microchip can be seen as a downgrade, an act of transgression, or even a profanation of the sacred cyber-body? Or, from a religious perspective, can removing it be regarded as an act of transcendence, the removal of the "Mark of the Beast", or the purification of the human body as once determined by deities? Due to the ontological condition of cyborgs, everything is blurred.

4.2.3. The Digital Boundary

As emphasized by Roux and Belk (2019) in the case of tattoos, human bodies are a place "where we see the world and where we reside" (Merleau-ponty, 1960,

p. 165) and from which, so far, it is not possible to escape (Foucault, 2006). In this scenario, the microchip installation is a Konami Code strategy to circumvent this ontological and existential condition. The following Figure 34 shows several grinds to escape the corporeal entrapment, as listed in the comments.

Figure 34 - Photo of several installations and euphoric comments about the digital integration. Source: User 54 (Facebook, 2019).

The dissolution of the I/Mine boundary helps cyborgs to be physically and digitally here-and-there at the same time in a dialectical fashion, as the practico-inert principle supports (Butterfield, 2012; Kleinherenbrink; Gusman, 2018; Sartre 1957/1968, 1960/1976, 1985/1991). An interesting point to consider is Lévy's (1998) view on the modes of existence in the cyberspace: virtualization relates to potentialities of existence and actualization to the materialization of these potencies. As a simple example, there is a tree inside a seed. It is there in the form of potency but not yet as an actual element of the material world (Lévy, 1998). This

more or less material view allows us to shift away from the immediate concreteness of the here-and-now as the only possible reality. In this context, we may consider avatars as extensions of the self in the virtual world, and, despite their potential and representational nature (Belk, 2013, 2016b; Lévy, 1998; McWha et al., 2018), they are all real. However, differently from the potential tree and avatars, a part of the cyborg's existentiality is already actualized in the digital world since there is the internalization of the external data, and externalization of the internal data in dialectical and perpetual dynamics. The 010101s are literally part of the cyborg-body, actual and real, here-and-there at the same time. The cyborgization phenomenon may add a new layer to the role of digital boundaries when it comes to the discussion about human-machine interaction and the mutual constitution.

By dissolving the digital boundary, the Extropian Transhumanism principle of breaking with the biological dimension and, consequently, with physiological temporalities of the body, may lead to the logic of overcoming the entropic condition (Humanity+, 2010; Lee, 2019; More and Vita-More, 2013). The cybernetic organism (Clynes and Kline, 1960) seeks constant connection with different intra/extracorporeal databases. The cyborg can thus be seen as an algorithmic embodiment that pursues access, interpretation, and incorporation of the data generated by countless interactions with digital devices. This is possible due to the efficiency of the control, the coupling of different systems, and the optimization of the communication vectors between cyborgs and digital devices. All of this, in the light of Wiener's (1949, 1950) writing on cybernetics premises where he states: It is the development of languages and techniques that allow us to solve the problem of control and communication in general. Therefore, I may say that, first, by being able to establish a shared common syntax or language with digital devices, cyborgs can exchange data from the inside. Second, once a non-mediated compatibility is somehow achieved, the morphological freedom and desired existential project can then be exercised. The following Table 12 exemplifies the cyborgs' 010101s and a digital device that "speak" the same language.

Type of implant	ISO Standard	Type	Frequency	Example
NExT	ISO14443A	NFC & RFID	13.56 MHz	Samsung Ezon SHS-3321 Keyless Smart Universal Deadbolt Digital Door Lock ISO Standard: ISO14443 A Type Type: RFID Frequency: 13.56MHz  Figure 35 - Samsung Smart Door Lock. Source: Samsung (2020).
xM1	ISO14443	NFC	HF 13.56 MHz	
xNT	ISO14443A	NFC	HF 13.56 MHz	
xSIID NFC + LED	ISO14443A	NFC	13.56 MHz	
Flex One	ISO14443	NFC	HF 13.56 MHz	
Spark 2 Cryptobionic	ISO14443A	NFC	HF 13.56 MHz	

Table 12 - Example of language compatibility between cyborgs and digital devices.
Source: Elaborated by the author.

As shown in the previous example, only by matching the ISO, Type, and Frequency features with the cyborg's embodied 010101s, will the product work. Moreover, given the worked matter as a practico-inert's outcome (Sartre 1957/1968, 1960/1976, 1985/1991), the absence of digital boundaries would allow for a greater connection with other smart devices inside a place. This scenario implies, thus, countless possibilities for connectivity, interaction, and data exchanging between cyborgs and digital devices. Reinforcing the blurring aspect of the ontological condition of machine-like humans, the here-and-now can also be there-and-then, considering the ever-flowing movement of data. Here, just as a thought, I can say for myself: every time that I see a RFID/NFC reader to open a door, make payments, or any system such as these, my hand "automatically" goes there in an attempt to exchange some data. After all, as Neil Harbisson mentioned during an interview: "I'm not using technology or wearing technology. *I am technology*. It never comes off. It never stops." (BBC News, 2014, highlighted by the author).

Having all of this in mind, and how the idea of a core self (Belk, 1988) has been challenged over time (e.g., Ahuvia, 2005; Belk, 2013; Ruvio and Belk, 2018), the iMine Boundaryless dimension challenges not only this idea but also problematizes the limit of limits. For instance, User 55 has 26 implants for different purposes, and I have only one: does it mean that User 55 is a more machine-like human than me? Additionally, since the indexable big data is becoming bigger every second (Lewis and Callahan, 2019), it is not possible to precisely determine where cyborgs' data are. If we then consider the Deep Web, the non-indexable part of the internet (Kolias et al., 2018), the task to define the core of anything is impossible. The dissolution of digital boundaries makes it a bit harder to understand where and when data will appear or do something. Despite its omniscient, omnipresent, omnipotent status (Belk et al., 2020; Cohn, 2016; Gallaher, 2019), the Great God Google sometimes cannot help us to define who, what, and where we are. At least for some people, cyborgs are burning with the Promethean fire as opposed to hell fire. Should I say: "thank god(s)" or "thank Prometheus"?

4.3.
The Data Meshwork

Seated on the chair, plugged to his headjack, Neo asked: "I'm gonna learn Jiu-Jitsu [sic]?" After six seconds of uploading all knowledge about it into his mind he became a black belt. Possibly, this is one of the most acclaimed scenes by transhumanism sympathizers. As a brown belt karateka, I tend to agree partially with Watkins and Molesworth (2012) that the lack of esthesic characteristics of the Jiu-Jitsu Gi, belt, tatami, and opponents with their sweat, smell, blood, and broken bones, plays a significant role in the embedment of our essence in a digital possession over time. That would be equivalent to owning a book but not possessing it, since "only by reading, understanding, and remembering a book does it truly become ours." (Belk, 2018a, p. 122). Unquestionably, the role of the material body within a temporal framing is of evidently cardinal relevance in Sartre's former dualistic and strict ordered ontology (Catalano, 2005; Eshleman and Mui, 2020; Flynn, 2005; Schroeder, 2010). Nevertheless, given the cyborg's composition of flesh, bits, and bytes, the dialectical relationship with the external world only makes the role of materiality and temporality in the process of knowing

to occur in a distinct phenomenological way (Aronson, 2020; Culbertson, 2002; Flynn, 1986).

Borrowing the term from Ingold (2007), the meshwork is an interwoven trail, an entanglement of lines in which life is experienced. Rather than observing the cyborgization process as an ordered and well-demarcated network, I suggest considering it as messier. Since the hacker and grinding cultures, as well as the Extropian Transhumanism, are highly influenced by liberal ideals of freedom (Coleman, 2018; Giger and Gaspar, 2019; Levy, 2010; More and Vita-More, 2013; Turkle, 1984, 2011; Vita-More, 2019), the notion of an open-source self is evident, similar to the co-construction of self proposition (Belk, 2013). The following thread exemplifies it (User 56, User 57, Facebook, 2019).

> User 56: I have the vivokey flex one and installed the ndef 4k container and can't remove it. I can remove other applets. Have someone other the same problem?
>
> User 57: Hmm... ok. FYI you can turn on screenshots in the Fidesmo app if you go into developer settings... Then enter the app id 61b4b03d and destroy for the service id. download the fdsm utility (it's java so platform agnostic); https://github.com/fidesmo/fdsm
> type:
> fdsm --delete-applet 61b4b03d and press Enter
> If you have windows and want a shortcut, and you trust that i'm not running a trojan on your system or anything, you can try this EXE file... if FB will even let me post it; http://amal.net/caps/fdsm.exe
> the fdsm utility is Java... it will run command line. Check the GitHub for instructions.

This brief but meaningful set of messages underlies the Data Meshwork concept as an aggregate of dispersing unknown data from the grinding community (Belk, 2013; Hastings, 2019; Ozansoy Çadırcı and Sağkaya Güngör, 2019; Petersén, 2019; Yetisen, 2018).

4.3.1. The Internal Digital Organs

At this point, I am taking the liberty of adapting Sartre's knowing process to the cyborgization context, which would be to know by being aware of known unknowns and unknown unknowns. At least Morpheus would stand by my side here. In the aforementioned thread, User 57 is specifically asking User 56 to trust him/her so the microchip can be fixed by means of installing the unknown software. Somehow, this process is endowed with a teleological and *post hoc* nature, just like several forms of enchantment: faith in a combination of actions that leads to

expectations from the audience, culminating in ecstasy, astonishment, and an expanded sense of power when it works (Belk et al., 1989; De Waal Malefyt, 2017; Douglas, 1984; Higgins and Hamilton, 2016; Rolfe, 2016).

From a cyborgian perspective, this type of intervention can be compared to experimental treatment on a human's vital organ. In other words, by exercising his/her morphological freedom in the quest for the unknown (Ferrando, 2019; More and Vita-More, 2013; Rumsfeld, 2002; Sandberg, 2017), User 56 is apparently open to running any risk or accident associated with hacking the hack, in order to attain transcendence (Landowski, 2005). As one of my interviewees mentioned: "the possibility to hack or to be hacked is part of the game. It's normal." (Cybug, Interview, 2018). In terms of an existential project, the pervasiveness, and accomplishment that a cyborg has in mind become open up to new unknown possibilities. New data comes with a new entanglement of lines (Ingold, 2007), which may incite the occurrence of new visions about their potentials, roles, and ambitions. Considering the transgressive behavior for transcendence entreated by Doktor Sleepless (Ellis, 2008), the understanding, organization, and practice of transgressions are, indeed, a matter of context (Finsterwalder et al., 2017; Hejduk, 2010; Jenks, 2003; Lippens and Hardie-Bick, 2012). However, it is interesting to observe a passing mention on the Almighty FB (i.e., Facebook) and the possible hubristic consequence (e.g., deleting the post) for transgressing the sacred norms of the techno-divinity (De Hart and Farrell, 2011; Galič et al., 2017; Hrynkow, 2020; Noble, 1999).

Despite the apparent willingness to be hacked as "part of the game", several discussions about security, cryptography, invasion, and cloning are always among the main topics. Especially, when the conversation occurs on the more technical online platforms. For some, the terrifying possibility of having personal data exposed is definitely not "part of the game". As recommended by physicians, in order to have a healthy heart, we need to eat, sleep, and exercise properly (Tobaldini et al., 2019). Equally, to have a "healthy data", we may need to do or undergo some check-ups, and take measures to protect the cyborg's digital organs. The following thread exemplifies a discussion about this (User 58, User 59, User 60, Forum, 2019).

User 58: RFID Implants and preventing malicious cloning

One thing that has stood out to me is the risks associated with a malicious attacker/bad actor cloning an RFID badge from around 18" away, then using that to gain access to whatever access control systems said RFID is intended to protect. This has led to me wondering about securing an implanted RFID tag. With a traditional badge, I can (not that most do) slip the badge into an RFID shielded device/pocket/etc when it isn't in use. I can leave it at home in a secure location when not in use, etc. With an implanted chip - I'm carrying my credentials 24/7 - which is the point, but also is a new risk and attack vector if someone wants to clone my chip. How does one account for and mitigate this risk?

Do I need to sew some anti-RFID materials into my winter gloves? Or perhaps into my pants pocket and keep my hand in my pants at all times? My examples are a bit tongue-in-cheek of course, but it is a topic that came up with some of my new co-workers. They have easy options with a traditional RFID badge to just leave the device behind or pop it into an RFID blocking wallet if they are worried over security. With an implant, both of those countermeasures seem to be gone. Love to hear what you all think about the risks and how to best minimize them going forward.

User 59: Please use something that supports challenge-response authentication process (like DESfire EV2, they also come in glass and are listed as xDF2) to open your doors. It's impossible to 'clone' these. Everything else is security through obscurity; I know it's almost impossible to read the implanted one from large distance; I know it's easier to break the door sometimes; I know the hacker must know what chip do you have, the implantation spot, etc, to have it cloned; I know regular robbers only know how to break mechanical locks (give them few years to evolve btw); It's still security through obscurity, no excuse. Security through obscurity is always bad.

Never use your chip's UID as a main access factor for valuable property. Avoid using NTAG216 memory as an access factor even if your memory is protected by password (it could be sniffed by waving pm3 near your reader). And yeah, PACK is also not safe. Use secure tech if you want some security.

User 60: If you really want a true unclonable implant go for an xDF2 with DESFire EV2 chip and put it into private mode. In private mode the UID of the chip will be randomized for each read / iso14443a session. Each AID can be AES or 3DES keyed to protect the contents.

When it comes to knowing, in Sartrean terms, it is also worth mentioning that my blood type is O+, and I know that it is running through my veins. Likewise, it is possible to say that my microchip is in my hand with some data, but I cannot guarantee where a considerable portion of my data will be (De Laat, 2018; Dimitrov, 2019; Gutierrez et al., 2019; Johnson et al., 2020; Kim et al., 2019; Wright and Xie, 2019). What is possible though, is to know and have a point of departure: the mobile app to setup the microchip behavior based on my digital identification, as if it is the controller of my "internal digital organs." Figure 36 shows screenshots of my app interface, identification number, that is, my "digital DNA."

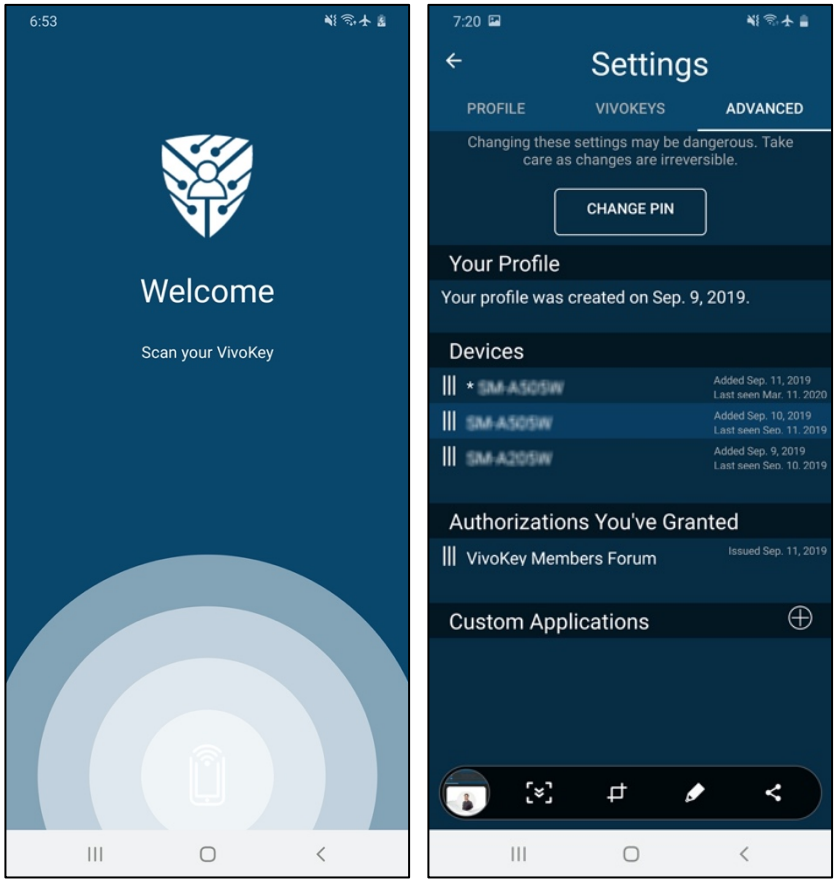


Figure 36 - My app to control the microchip.
Source: Personal archive (2019).

Still in the context of nurturing and taking care of these digital organs, there is much advice and warning available from specialized consumers. Taking into consideration the practico-inert principle (Sartre, 1957/1968, 1960/1976, 1985/1991), all of us are the outcome of a dialectical relationship with the world, for better or worse. Thus, the interesting point here is that an operational system made by Google, for example, could provoke disastrous consequences. Although it is possible to have some control over the data stored inside the microchip, to some extent, our app is subjugated by an external factor, such as a disease and its cure. I must confess that being a cyborg is indeed an exercise of self-experimentation, openness, joy, ecstasy, ongoing discovery, fear, concern, and suspicion at the same time. Everything in this ontological condition is blurred and messy. The following Figure 37 shows an example of a negative outcome based on a trivial practice for cyborgs: upgrading the system.

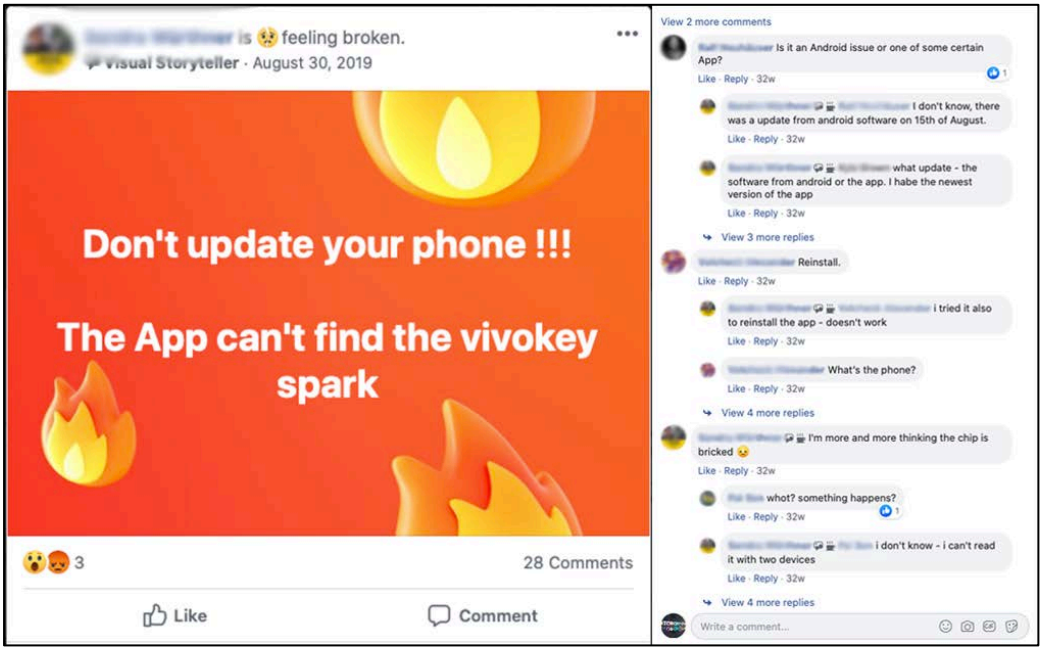


Figure 37 - A warning about an operational system failure.
Source: User 60 (Facebook, 2019).

Usually, information about our physiological condition comes from our inside. If we need to know something related to the brain, a computerized tomography may be the option. If we want to trace our DNA, some blood, saliva, or hair may be required. By identifying a set of biochemical components and then associating it with biometric visualization, consumers are able to access intelligible information about it on their phone screens (Gardner and Jenkins, 2016; McStay, 2020; Pingo and Narayan, 2019). The immense knowledge about the human body is undeniable, and so too the multiplicity of approaches to deal with its issues. We cannot deny the lack of knowledge that we have about our data, especially in an era in which all content, code, script or suggestion is often decided by unpredictable algorithms (Jimenez-Marquez et al., 2019; Reyzin, 2019; Thompson, 2019). User 61 and the unfortunate episode in bricking the chip due to wrong information may be an example of this (User 61, User 62, Forum, 2019).

> User 61: I'm a complete novice with NFC, so I realize I probably screwed up big time. Sadly, I only stumbled onto the Dangerous NFC app after this all went down. It was a great learning experience, but I truly feel bummed out that the implant I got 24 hours ago is now unusable.
>
> User 62: Hey there… sorry to say your chip is toast now. The first challenge is that Nintendo uses different ntag2xx chips… I can't remember which, but I think it's ntag215 which has slightly less memory. The ntag series also supports a version command so if they are really

> adamant that people not use unofficial tags with the system, the first thing they will check is that the tag is responding properly to the version command.

Thinking about Shelley's (1818/2012) Frankenstein novel and my ensuing concerns about innovation and responsibility, a quote from Wiener (1950, p. 182) came to my mind: "machine's danger to society is not from the machine itself but from what man [sic] makes of it." This emerged during my *#WTF did I do?* stage of the autoethnography. With transcendence and the health of our vital organs in mind, a physician would ask: what kind of food are you eating? A cyborg would ask: what kind of code are you coding?

4.3.2.
The External Digital Organs

Outside the physical body, cyborgs, most of the time, access unknown and unstructured data, which requires knowledge about coding languages to assemble distinct types of connections. This aspect speaks to the practico-inert principle (Sartre, 1957/1968, 1960/1976, 1985/1991) and its dialectical nature between the inside and the outside, the human and non-human, the past, present, and the future. The following example illustrates the meshwork essential to the ontological existence of cyborgs (User 63, Forum, 2017).

> With the implants: there's an entire ecosystem of devices out there (access card readers, other people's cellphones...) that I never really paid much attention to before, that normally talk to their "cousins" on loan to their human bearers - the various cards, badges and tags people carry around. I can now interface with these devices directly. Well, it's still a foreign object talking to the devices, but the foreign object is inside me. As a result, I feel as if I've become half part of that ecosystem - silently and automatically "adopted" by that particular family, if that makes any sense.

As another personal example, the following Figure 38 shows my "external digital organs." They are charged with an elevated level of cathexis as much as my known and unknown data that flows through them. Somehow, I have faith that they are essential to my existence as a cyborg, just as Neo, the headjack, and the Matrix's code.

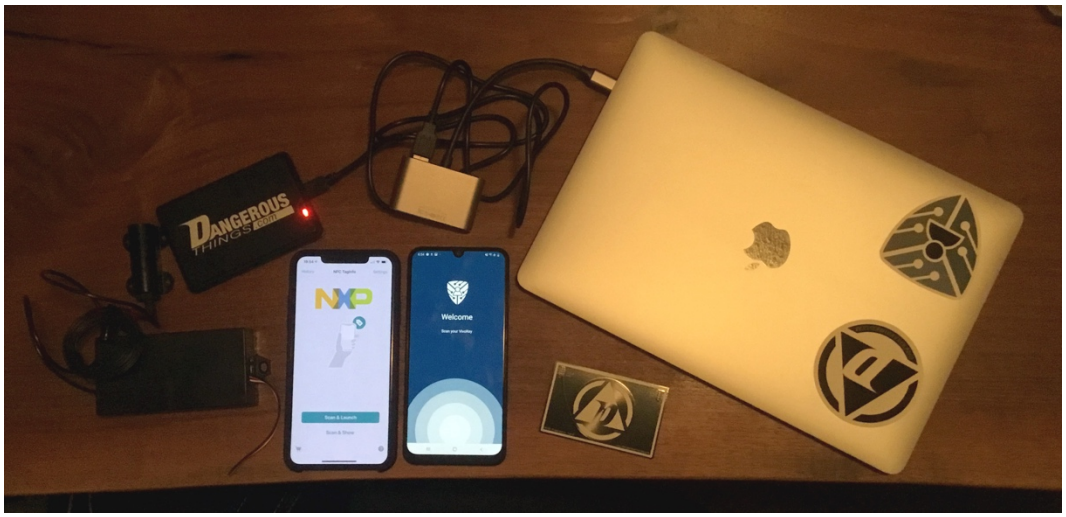


Figure 38 - My "external digital organs".
Source: Personal archive (2020).

Even though it is occasionally pictured as a "citizen science" (Bagnolini, 2016; Braidotti and Hlavajova, 2018; Miah, 2017; Yetisen, 2018), grinding or becoming a machine-like human demand a set of skills and knowledge far from the reach of the non-specialized consumer of technology (De Bellis and Venkataramani Johar, 2020; Thorun and Diels, 2020; Yadav and Pavlou, 2020). In most cases, advanced human biology and coding are the required basic minimum, as shown in this interview (CyberTo, Interview, 2019).

> Doctors generally don't do it because they don't understand, they've never seen it in their lives, and they don't have experience with it. No friend of mine who is a doctor has applied this. Few doctors will apply an implant. If you ask a doctor to do it, he will deny it. Whereas if you ask for a piercer, he'll just ask you: how many holes do you want? He will hardly refuse to do it [...] I have one. I applied it to myself before even launching to the market. Since I coded and developed ours, the company staff looked at me and asked: "And now, what are you gonna do with the implant? Who will be the first to apply?" I said that I was going to apply it to myself. As I am also in the medical field, my PhD is in surgical sciences in the area of organ transplantation. I thought: "ah... I will do it myself". I called some medical friends too and said: "let's do it". They helped me and I ended up applying it to myself. That was the coolest!

In my situation, there was no prior knowledge about human biology at the level of performing any kind of grinding practice. Only after attending the seminar on body modification and tech implants, in 2019, did I start to understand the complexity of the human-machine merger. I dare to claim that, in the broader grinding market, there is no friendly user interface or plug & play offer that could be desired by a non-specialized consumer of technology (Barfield and Williams, 2017; Caon et al., 2020; Diefenbach and Hassenzahl, 2019; Hibbeln et al., 2017;

Mou and Xu, 2017). As an example of the complex market setting, some grinders have been requesting micro-cards from their banks, encapsulating the inlay payment in a biopolymer coating, and implanting them. Even though there is a "payment implant death date," as discussed online, grinders are not that concerned about it or even with the removal procedure. The primary purpose here is to be able to make financial transactions by exchanging data with/from inside their bodies. The next thread illustrates the financial data-driven grind (User 64, User 65, User, 66, User 67, Forum, 2019).

> User 64: Fantastic forum. Have learnt heaps browsing the various topics and answers. I'm from Australia and for me the biggest drawcard to be implanted would be the ability to pay for goods via, what we call here, 'tap and pay' or 'tap and go'. If I'm reading correctly it appears this ability is some ways off. Am I mistaken or can it be done? If it's off in the future what sort of timeline are we talking? Months, years, decades? Thanks in advance and I'm really enjoying reading what people are getting up to.
>
> User 65: Since you live in Australia, you might be able to get a micro-card variant of your bank card, which could be converted into a implant using this service: Micro Bank Card Payment Conversion Service | RFID & NFC Chip Implants The downside is that they function for a maximum of two years because of expiration/deactivation. That may buy you enough time for the VivoKey to support payments.
>
> User 66: Aha. That looks like the go. Is anyone using these successfully at the moment?
>
> User 67: I shipped my card to DT - it arrived yesterday. When it is successfully converted and I get it back, I will post pictures / videos

Figure 39 shows a collage of elements used during the conversion and a Facebook post with a demonstration.

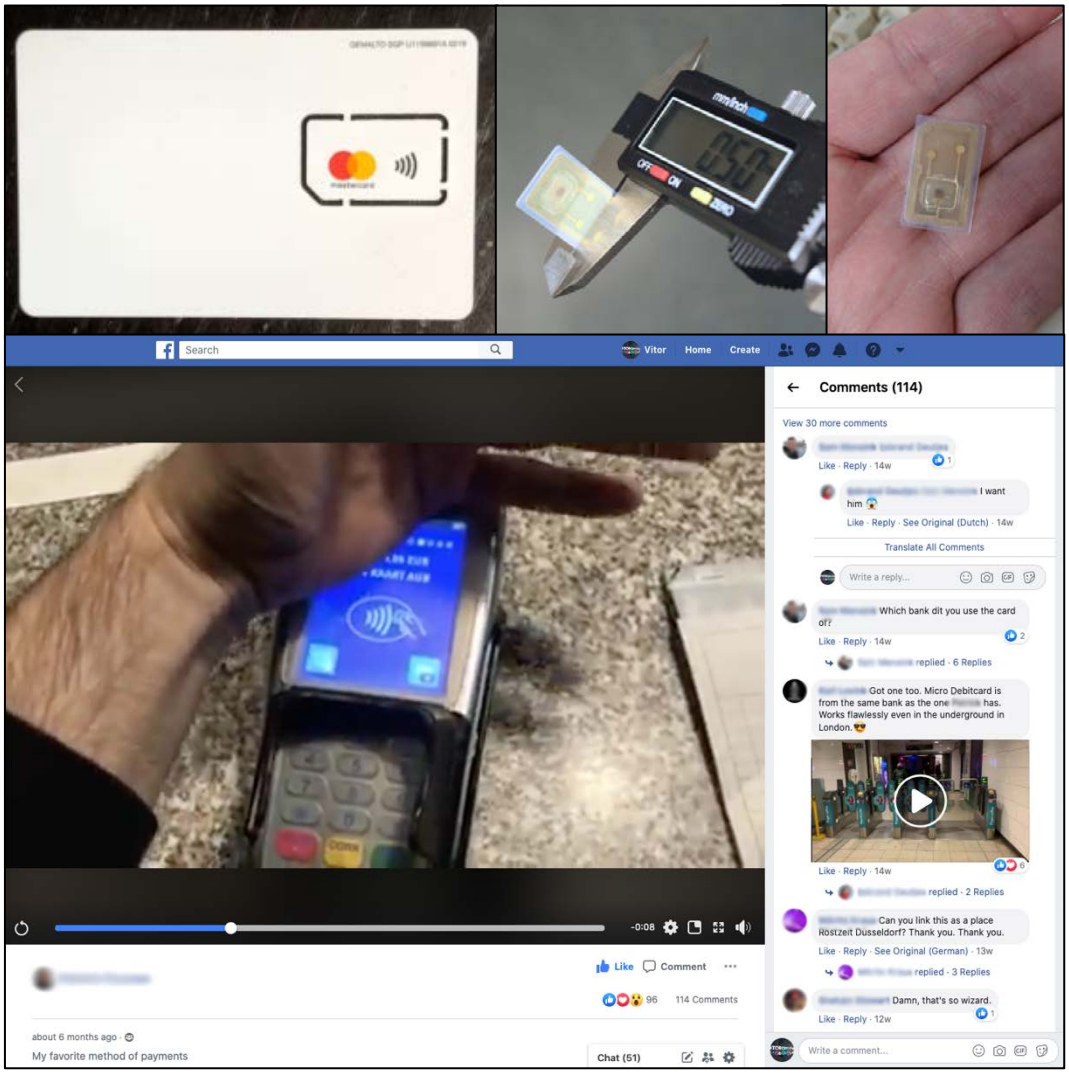


Figure 39 - Collage of elements for cyborgs' financial transactions.
Source: Facebook (2019).

Simply put, if I do not know how to setup my existential project, I may no longer be able to exist as a cyborg. Since I do not desire to experience any kind of anguish (Sartre, 1956/1978), the more I get to know, the more connections I may have with the external world. The more connected I am with the outside world, the more distributed my self is. The maintenance of the ontological condition of cyborgs is thus, unquestionably based on the worked matter (Sartre 1960/1976). When considered the relationship between the co-construction of self (Belk, 2013) and the extension by association principles (Belk, 2015a), it is truly possible to perceive the flat symmetry expected of actants in the case of cyborgization (Bennett, 2010). The following thread illustrates it (User 68, Forum, 2017).

> Hey all wanted to share with you something I've been working on and maybe of interest to many here. I got a xNT implant about 7yrs ago, but have only been working on this project off/on for the last few months, but very excited now that it's a working thing. I've made this NFC reader that has WiFi, a RGB notification LED and fits inside of a 2in x 2in x 0.8in enclosure, powered by USB.
>
> I've written basic software that will let you power it on, connect it to a WiFi network, and program in your NFC tag and it will trigger a IFTTT event, all without you having to write code. However if you're interested in writing your own program or helping improve it's software it's up on github. Here are two videos of me demonstrating it, the first is just using it to unlock my front door, the second is a quick walk through of how to set it up with your tag. https://www.youtube.com/watch?v=mKFkm8zK5ho
> https://youtu.be/GJwHEKRzi4o
>
> I've made roughly two dozen boards, with the intention of making more if there is a demand (selling the first 25 will allow me to purchase the parts to make more). I am still 3D printing more cases, but should be done with that soon. If you're interested in getting one of the first batches of boards I ask that you be familiar with microcontrollers at least enough to feel comfortable in updating the firmware (arduino ide). They work currently fine but development is not done yet.

Since it is an open-source code and IFTTT-based project, the possibility of the incorporation & extension of data is virtually infinite, no matter for whom, where, or when. It will depend on the cyborg's creativity and knowledge about the type of assemblage that is essential to be built (Giesler and Fischer, 2018; Hoffman and Novak, 2018; Hui et al., 2017; Mulcahy et al., 2019; Novak and Hoffman, 2019; Roy et al., 2019). Figure 40 shows a collage of User 69 structuring an RFID punch clock for an Internet of Things (IoT)-based project for a company so that employees can use their microchips.

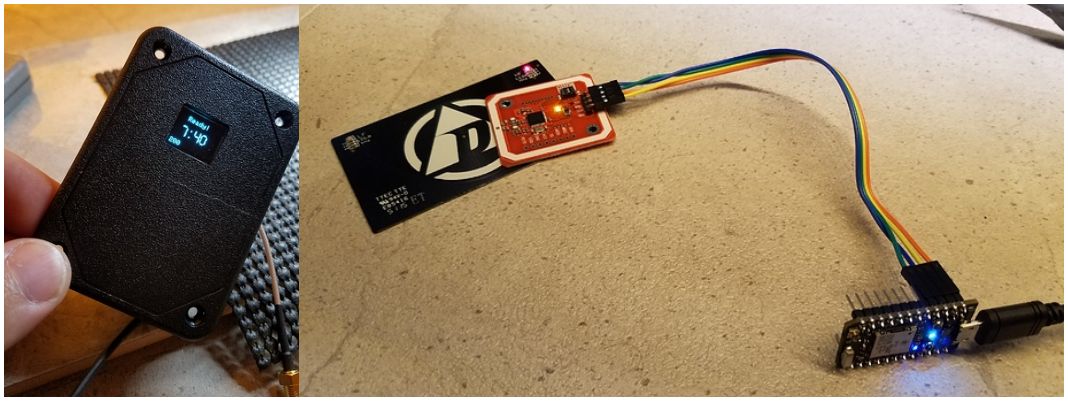


Figure 40 - After months of tests, User 69's three lights were on, which means that data was up and running.
Source: User 69 (Forum, 2017).

Agreeing with Belk (2013, p. 480), the materiality of an item is not necessarily what secures its greater significance to the self. For instance, what

grants you access to a smart home with an NFC-based padlock is the data and not the physical key or human biometrics. At this point, I ask: do I really need to physically touch an object to transfer my digital aura or would that be illusional? Are my NFC microchip and data not powerful enough to perform the contagious magic by themselves in an IFTTT chain (Belk, 2015a; Bennett, 2010)? An interesting point in the meshwork context is: cyborgs know that there is data that can be accessed and shared, while some data is secret or even "inexistent", therefore, in one way, all this data can be considered as part of themselves in a "hack of the I" (Belk, 2013; Belk et al., 2019; Eckhardt et al., 2019; Lindgren and Lundström, 2011; Roberts, 2012; Sifry, 2011). Should we give our banks or Agent Smith a call to discuss this grind and the outcomes for their data management? I would talk to Prometheus first about this Konami Code.

4.4.
Cyborg's interactive modes of existence

When Neo regained consciousness after learning Kung Fu, Morpheus asked him to show his knowledge in a sparring room, a virtual reality program similar to the Matrix. The first part of their conversation was about general rules of the universe, such as gravity. However, Morpheus warned Neo that he should also learn how to bend and break those same rules to do what has to be done. To become who he can be, and desires to be. The dialogue between these two characters demonstrates the necessity to observe the cyborg's existential modes in a distinct manner. Instead of the sequence having, doing, and being, which suggests a simple transitional phase, that of *to do* (Sartre, 1956/1978), cyborgs can only accomplish their virtual and actual existence by *doing*. In other words, to be-in-the-world as machine-like humans and perform particular non-human activities, there must be the occurrence of iterative interaction between god's creation (e.g., ACGT) and a human's creation (e.g., 010101). From a sociosemiotics perspective (Landowski, 1989, 1997, 2005), it means that there is a wanting to, a having to, a being able to, and a knowing how to do the interactional praxis, in order to co-exist with worked matter.

If one adheres to the practico-inert principle (Sartre, 1957/1968, 1960/1976, 1985/1991) as the cardinal category of cyborg reality, then, they must conceive their

existential project as if they were *bricoleurs*. When a *bricoleur* is using his knife to carve a piece of wood, s/he is controlling and being controlled at the same time by pure esthesia—the way the knife cuts makes the artist adjust the maneuver (Floch, 2000). The same is valid for grinders, as shown in discussions about needle positioning, suturing techniques, types of coding languages, bricking, hacking the hack, and setting-up devices. As in the extension by co-constituted action (Belk, 2015a), both parts are needed equally to make something happen. As emphasized by Sartre (1960/1976, p. 159) "machines, by their structure and functions, determine the nature of their servants […] and, thereby, *create men* [sic]." Within this scenario, Figure 34 represents my suggestion for the cyborg's iterative interactions that sustain the extension & incorporation process in an everlasting way of being-in-the-world.

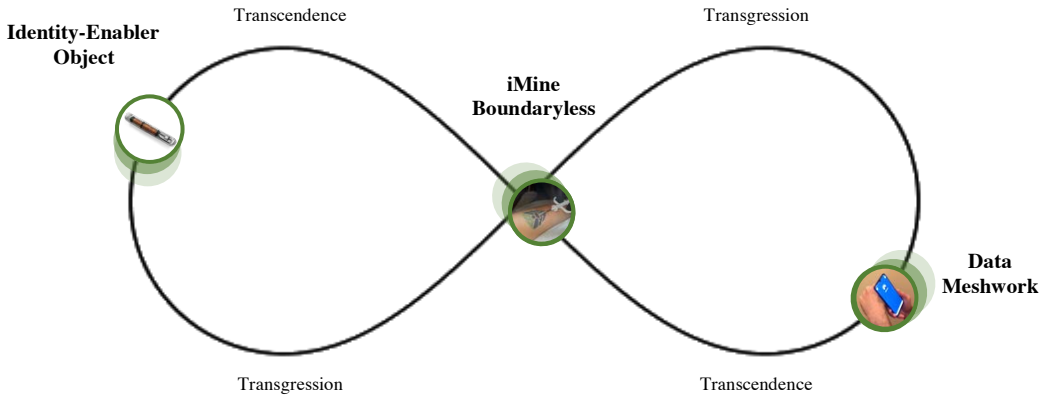


Figure 41 - Cyborg's interactive modes of existence.
Source: Elaborated by the author.

Detailing the proposal, each moving dot represents one conceptual component of the Interactive Self, considering the ontology of cyborgs as investigated here. On the left, there is the Identity-Enabler Object representing the NFC microchip. On the right, there is the Data Meshwork as an aggregate of data exchange via interactions between cyborgs and digital devices. At the center of the image, but not fixed, there is the iMine Boundaryless. Despite the discursive construction of transcendence via rationality, controllability, linearity, predictability, as in the positivist tradition, the process of cyborgization comes complete with faith, creativity, chaos, experimentation, and serendipity, as in the

interpretive tradition. Having this in mind, and in agreement with Jenks (2003), it is plausible to argue that the transgressive behavior complements the transcendent one, which at times are indistinguishable from each other. Over time, these conceptual components overlap in distinct ways depending on the context, such as the human body condition and technology used. There is no single trajectory or speed for this. Given the cyborgs' capacity and necessity of extension & incorporation at the same time, I claim that, at each encounter of these three components, cyborgs develop and reiterate their identity through their existential projects. That is, every time the microchip in my hand is scanned and data is exchanged, my ontological condition as a cyborg is reinforced. Thus, when a magic trick works there is a magician, when a bewitchment works there is a witch, or when a grind works there is a cyborg. Figure 42 shows my interaction with my smartphone to exchange data, as proposed by the Interactive Self.

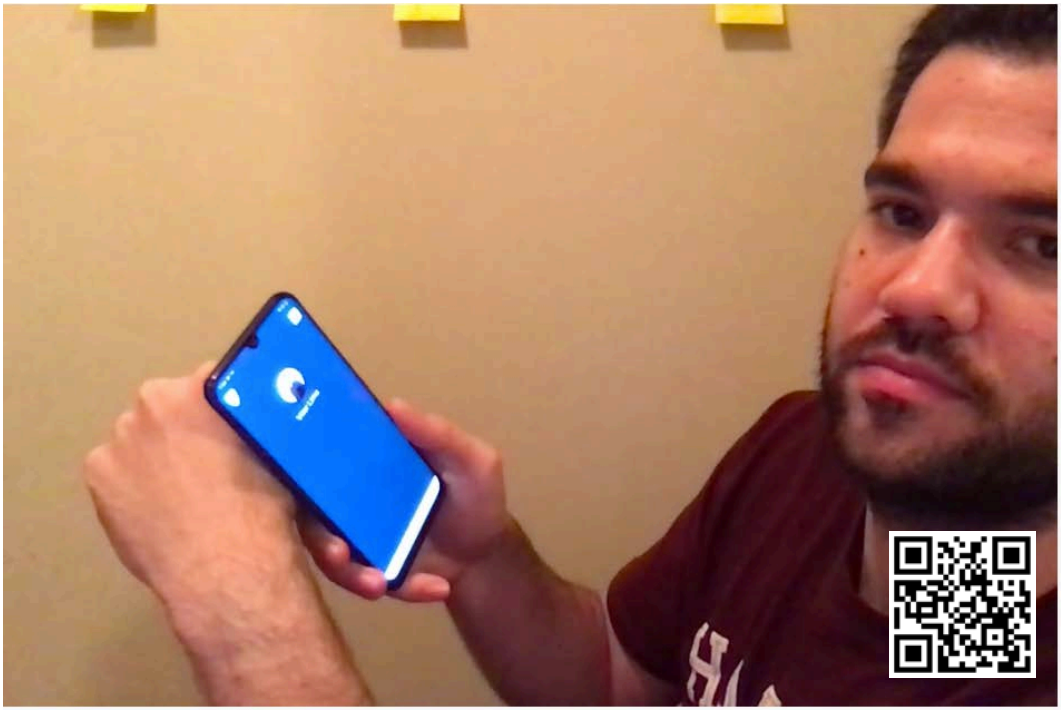


Figure 42 - My interaction to exchange data with the smartphone.
Source: Personal archive (2020).

To enable and advance the cyborg's interactive mode of existence, the three conceptual components are placed on a shape known in mathematics as the Möbius strip (Bang, 2018; Henry, 2020; Morton, 2015), and in many cultures as the *ouroboros* (Cartwright and González, 2016; Leeming, 2014; Sheppard, 1962).

Throughout human history, different versions of the same symbol represent the eternal search for wholeness, as perceived in archetypal manifestations of gods (Jung, 1959a). This quest for divine completeness is often figurativized by a dynamic circular form of a snake or dragon eating its own tail (Jung, 1969c). The symbol, as proposed here, is justified given humankind's long-lasting fascination for achieving something beyond what is given by an Almighty divinity. In fact, the volitional cyborgization places humanity one step closer to its ancient dream of performing god-like miracles (Belk et al., 2020; Belk, 2017a; Davis, 2004; De Waal Malefyt, 2017; Gell, 2008; Mayor, 2018; Musiał, 2019). Although hubristic behavior is millenary, echoing along the ages with terrifying consequences, our ambivalent quest for transcendence makes us transgress by "eating ourselves", just as the snake and dragon do.

Recalling Sartre (1956/1978, p. 88), our "desire is a lack of being," and, as concluding example of it, I will share a personal episode. The following paragraph comes from my autoethnographic records (Personal notes, 2019).

> I went to a bar to have a beer with Luís and, getting there, we found a different payment system. The customer has to buy a prepaid card and charge it with the desired amount or use any other NFC-based card to pay, such as those used on the subway. The cashier takes any card, taps it on the reader, and associates its ID number with the customer's account. After that, you just have to tap the card on the automated beer faucet. When I saw the operation, the first thing that I thought was #WTF and then asked to read my chip because that was how I would make the payment. The cashier did not understand and insisted that I needed a card. I mentioned that I have a chip inside my hand, and it works like a card. The cashier, visibly perplexed, did not allow me to tap my hand on the reader. Disappointed, I gave my metro card.
>
> A few minutes and beers later, the cashier came to our table and politely asked to better explain what that chip was. He seemed to be genuinely interested but still uncomfortable about something. In a very calm and didactic way, I explained the operation and how the payment would be made. He thanked me and left the bar. Minutes later, the manager came to the table and apologized for the eventual inconvenience of the employee and all the interrogation I said that there was no reason for apologies because nothing had happened. The cashier was polite and seemed just to be curious. Then he said that, actually, the cashier is a bit of a religious extremist and thought I was a demon manifestation because I had the "Mark of the Beast" in my hand. Immediately, astonished but calm, I told the manager that there was no reason to be scared. I even took my rosary out of my pocket to prove that I would not burn my hand from contact with the sacred object.

In this situation, I was just trying to exercise my morphological freedom and desire to be a cyborg. All I wanted was to do something meaningful to enlarge my sense of self, just an application of my own Konami Code. Somehow, my wish was simply to exchange data by interacting with machines around me. I must confess

that, if the payment happened as I desired, it would be similar to a numinous experience (Jung, 1973), just like when Neo saw the Matrix's code for the first time. It would be magical (or sorcery depending on the perspective). An excellent archetypal reference to this personal episode resides in German fairytales: Rumpelstiltskin comes at night, offering a queen her wishes in exchange for the king's first-born (Grimm and Grimm, 2014). More recently, the tricky and pricy enchantment of this trickster (Hyde, 2011; Jung, 1954) is also represented in the TV show *Once Upon a Time*, in which the character's classic catchphrase may summarize the cyborgs' existential desires that must occasionally be confronted: "All magic comes with a price, dearie."

4.5. Summary of the chapter

In this chapter, I presented a discussion of the three conceptual components that emerged from my dataset that are the foundations of my conceptualization. They are: The Identity-Enabler Object, the iMine Boundaryless, and the Data Meshwork. These interactional elements elucidate each aspect of the process of volitional cyborgization and the lived experience of being a machine-like human. My purpose was to provide an overview of the dynamic components of the Interactive Self and their mutual relationship in sustaining the ontological condition of cyborgs. As a result of this inquiry, my theoretical claim is: *We, as cyborgs, are not only the sum of our insideable technologies, such as microchips, but also the sum of our interactions with external digital devices to exchange data over time*.

Defying the gods and the odds, machine-like humans exercise their morphological freedom by applying several transgressive Konami Code-like strategies to transcend their condition as human beings. The identified set of grinding practices, objects, and narratives are directly related to the research question "*How do consumers experience their existence as cyborgs?*". Once the process of physical, symbolic, and digital extension & incorporation was delineated, I provided the articulation of the Sartrean modes of existence for cyborgs. Influenced by Extropian Transhumanism ideas and the close relationship between technology and religion, my suggestion in answering the research question

"*Why do they become machine-like humans by choice?*" is to be one step closer to humanity's timeless dream of performing god-like miracles.

In the next chapter, I offer a discussion on cyborgization, its implications and possible contributions to three key areas in consumer research: technology consumption; identity studies; and bioethics within the context of Transhumanism. For each one of them, I not only articulate my findings and proposal but also suggest questions for future studies.

5.
Chapter: Discussion

The purpose of this doctoral research was to understand the human-technology symbiosis phenomenon, a consequence of which leads to the existence of the cyborg as a new form of life. My specific interest resided on the way consumers have been experiencing the dissolving ontological boundaries between humans and machines, the emerging changes in the sense of humanness, and the consequences of becoming machine-like humans. To achieve this goal, I searched for answers to the following research questions: (1) *How do consumers experience their existence as cyborgs?* (2) *Why do they become machine-like humans by choice?* Given the uniqueness of the phenomenon, a new approach was required to be developed that would account for its primary characteristic: the process of externalization of the internal and the internalization of the external in dialectical and perpetual dynamics. Grounded in abductive reasoning and considering the Extended Self theory (Belk, 1988, 2013, 2015a) as a starting point, I put forward my theorization on the Interactive Self, mostly based on Sartre's latter existentialist philosophy.

In the transhumanist era (Belk et al., 2020; Ferrando, 2019; Lee, 2019; More and Vita-More, 2013; Ranisch and Sorgner, 2015), techno-progressive movements encourage consumers to pursue existential projects by exercising their morphological freedom by becoming "more than humans." To explore this complex and unusual setting of consuming insideable technologies, the grinders, or DIY cyborgs, were not only my research context but also my own community in the course of the study. Essentially, following Doktor Sleepless' transgressive advice, I have a place at the table to talk about the lived experience of being a cyborg. In doing so, instead of health-based cyborgization (Case, 2014; Hables-Gray et al., 1995), I suggest that the volitional cyborgization can be discussed, by first observing an Identity-Enabler Object such as a NFC microchip. Then, as a result of literally merging with it, boundaries disappear, which lead to the iMine Boundaryless aspect of cyborgs' existential condition. Next, once it is possible to iteratively interact with digital devices, a Data Meshwork is established for the

unlimited exchange of data. As a result of this long and intense inquiry, my theoretical claim is: *We, as cyborgs, are not only the sum of our insideable technologies, such as microchips, but also the sum of our interactions with external digital devices to exchange data over time*.

Such hubristic behavior, thus, places humanity one step closer to its ancient dream of becoming miraculous and magical just like the gods. It is never enough to emphasize that, as Clarke's (1984, p. 76) puts, "any sufficiently advanced technology is indistinguishable from magic." Not only Morpheus but also Prometheus would presumably be interested in this transgressive version of Transhumanism. Far from exhausting the possibilities of contribution, implications, and limitations of a study such as this one, the next paragraphs present the three main areas to which I believe this research can contribute. Inevitably, at some point, they will overlap.

5.1.
Theoretical implications for technology consumption studies

The discussion about technology consumption should embrace more broadly not only technologies that are already in the market, or even in companies' launching pipelines, but also emergent and speculative ones (Belk, 2020, 2018b, 2019a; Dholakia and Firat, 2019; Doerksen, 2017; Garry and Harwood, 2019; Gauttier, 2019; Ramoğlu, 2019). The main point in terms of implications for technology studies is to advance our understanding of the powerful role of techno-devices being much more than just a means to an end (Heidegger, 1954/1977; Kozinets, 2008). It is far powerful than that (Belk, 2015a; Bennett, 2010). The perspective proposed by Transhumanism tends to consider technological apparatus as an inseparable element of our being-in-the-world. There is no humanity without machines, as there are no machines without humanity (Wiener, 1964/2019). At least for the time being (Bostrom, 2001; Fukuyama, 1992). The ontological hybrid and interactionist condition of cyborgs demands, therefore, extension & incorporation at the same time. The ontological hybrid and interactionist condition of cyborgs demands, therefore, extension & incorporation at the same time. Observing the proposed *continuum* for human enhancement (see Figure 11) inspired by the Artificial Life concept (Belk et al., 2020; Boden, 1996), so far almost no

investigations have been done within the interpretive consumer research tradition. Considering this scenario, I infer that we still have an extremist anthropocentric perspective and understand the non-human asymmetrically in a top-down manner. Close reading on the latest Kozinets' (2019a) and Schmitt's (2019) JCR curations on technology consumption highlights the issue. That being so, since grinding is *to* the body and *with* the body, this research complements past studies that considered the techno-body merely as a gaze for others (Giesler, 2012; Maisel et al., 2018; Taylor-Alexander, 2017; Tiidenberg and Gómez Cruz, 2015).

When considering cyborgization for restoration, there might be an exaltation from those who are facing health issues and are being aided by technological solutions, insofar as their conditions as human beings are being repaired. Thus there would be an acceptance of idea that the agentic objects extend themselves through humans, endowing them with their magical powers to provide more sense of humanness and spiritual elevation (Hall, 2017; Haslam, 2006; Hrynkow, 2020; Lavazza, 2018; Thompson, 2017a). Here, there is no need to apply any kind of grind, or hack, or Konami Code to the cyborgization process. It is interesting, however, to reflect about the meanings and roles of transgression and transcendence in technology consumption practices, being only socially accepted when disability/non-disability (Watson et al., 2012), death (Kyslan, 2019), and even the total extinction of human species (Boss, 2020) are the focus. Despite dysphoric references and confusing reactions on "playing gods" (Kılıç and Göçmen, 2018; Takhar and Houston, 2019), this moral foundation could be related to the Enlightenment legacy in the transhumanist era (Fuller, 2020; Lipowicz, 2019; Sorgner, 2008).

In this scenario, social institutions will clash, as did the Greek titans. How damaged should a body part be so it can be considered for a cyber-prosthesis? What would be, then, the criteria for the acceptance of the transformation of humans into machine-like humans? However, the real challenges for transhumanist technology consumption, mainly the Extropian Transhumanism one, are: when can someone truly choose to replace a healthy body part for a cybernetic one? When can morphological freedom be exercised without having to apply any Konami Codes to the body, as well as to the oppressive social structures (Bhattacharyya and Belk, 2019)? As Amal Graafstra mentioned: "Grinders are Do-It-Yourself cyborgs that are upgrading their bodies with hardware without waiting for corporate *product*

developed cycles or, you know, *authorities to say it's okay*." (Graafstra, 2013, highlighted by the author). Even though health discourses have a euphoric nature (Thompson, 2004), the power of the emergent and speculative technologies on the consumer's lived experiences may not be based solely on Romanticism (Campbell, 2018) and Gnosticism (Krueger, 2005). Since the Interactive Self is conceived based on a transgressive transcendence, this Promethean-inspired Ph.D. thesis sheds light on the mythological aspect of technology. What about Transhumanism's myths (Belk et al., 2020)? How many myths in one narrative could be articulated at the marketplace level? How would Shelley's (1818/2012) Frankenstein storyline be articulated in each Transhumanism's school of thought (Ferrando, 2019)?

Although consumers' narratives about cyborgization by enhancement have volitionality as their basis, becoming "more than humans," and achieving a higher or different sense of humanness, is sometimes perceived as a sinful transgression (Marinova et al., 2017; Sheehan and Sosna, 1991; Williams and Steffel, 2014). Nevertheless, considering the equal right to be free, to be able to build a cyborg ontological condition (Schau, 2018), grinders advocate for morphological freedom since their bodies are just a path to transcendence, in agreement with Doktor Sleepless' beliefs. Here, not only the functionality but also the design of prostheses plays a fundamental role (Clark, 2004) since some of them are insideable (e.g., NFC microchip) and not wearable (e.g., robotic arm) technologies (Pedersen and Iliadis, 2020). Although the anthropomorphization of products for acceptable reasons is seen as a good practice (Belk, 2016a; Brown and Ponsonby-McCabe, 2014; Hoffman and Novak, 2018; Mende et al., 2019; Van Doorn et al., 2017), technomorphizing humans may not be seen so favorably, potentially leading to stigmatization and a greater sense of dehumanization (Castelo et al., 2019b; Haslam, 2006; Lima et al., [s.d.]; Lum, 2011). Here, I ask: where is the threshold to the attribution of machine's characteristics to humans, so the "second uncanny valley", which is the negative perception of the technomorphization of human beings, could be avoided (Miklósi et al., 2017)?

Since the Interactive Self has the Identity-Enabler Object and Data Meshwork as two of its conceptual components, this research also sheds light on artificial intelligence, data automation, and their impact on human-machine interactions (Campbell et al., 2020; Castelo et al., 2019a; Davenport et al., 2020; Dholakia and Firat, 2019; Longoni et al., 2019). From this perspective, in terms of cybersecurity,

cyborgs can find both threats and allies, not only in smart devices but also in the data that are diffused throughout the many IoT connections. One of the key elements in consumer adoption of new technology, in these times of big data, is perceived security, even though it is discursively constructed as a must or a hype (Chouk and Mani, 2019; Fritz et al., 2017; Martin and Murphy, 2017; Ortiz et al., 2018; Thompson, 2019; Zhan and Zhou, 2018). Having that in mind, in accordance with Davenport et al. (2020), consumers may not be as complacent as my interviewees in terms of to hack or to be hacked as being "part of the game." Perhaps, Zeus would be the one to ask about what it is like to be hacked.

5.2. Theoretical implications for identity studies

The different notions of the self extension have been under discussion in consumer research for years, including: the having of possessions (Belk, 1988, 2013; Ruvio and Belk, 2018); the discussion of meaningful brands (Arvidsson and Caliandro, 2016; Lambrecht et al., 2018); the posting on social media (Lim, 2016; Schau and Gilly, 2003); and accessing rather than owning (Bardhi and Eckhardt, 2017; Loussaïef et al., 2019), all have been challenging the idea of the insides and outsides of the physical body. The issues around the boundaries of corporeality are further highlighted by the ambivalent state of the body as a possession or an essential part of us (Belk, 1992). Even in cases of organ donation, there are several concerns regarding the loss of self-identity (Darnell et al., 2020; Lai, 2012) and sacred humanness, given the non-original body part and all of its symbolic meanings (Belk, 1992; Dobscha, 2016; Krupic et al., 2019). As noted by several scholars (e.g., Walker, 2019; Wilkinson, 2000; Zwart, 2019), to some extent, human organs are central in the constitution of one's subjectivity. The psychological issues around the view of the organ as a replaceable body part, in some circumstances, may be related to its objectification and commoditization (Hutchison and Sparrow, 2016).

This scenario becomes even more complex on consideration of two factors: the scarcity of donors and technological development. On the one hand, 3D-printed artificial organs and tissues have the potential to help a higher number of people in need, by facilitating the recovery time, improving maintenance procedures, and

decreasing chances of rejection (Biglino et al., 2019; Nguyen and Camci-Unal, 2020). On the other hand, given the commercial aspect of these techno-body parts, the bodily material may assume a greater "object-like" condition, instead of a "subject-like" one. This context is full of intense conflicts with the view of one's body as singular (Zwart, 2019), inscribed with moral values (Boers et al., 2019), and as a sacred human element (Pargament et al., 2017). Considering this research as a whole, I wonder: hypothetically, would it be legal, ethical, Christian, or fair to print an artificial kidney in my house, and then donate my healthy and organic one to another person in need? Is the question about one's subjectivity regarding transplantation based on the volitional or the mandatory aspect of it? What would the limit be for self extension and incorporation, considering identity projects in the transhumanist era?

Considering the same existential-phenomenological philosophy, instead of seeking to "*invert the notion* of extended self, transforming it into the *incorporative self*." (Belk, 2014a, p. 5), my proposal contributes to the Extended Self theory (Belk, 1988, 2013, 2015a) by providing a distinct view on the former process of symbolic extension and incorporation. Cyborgs, given their ontological condition, have the capacity to extend & incorporate at the same time, physically, symbolically, and digitally. Accordingly, the new conceptualization further highlights, the consistency of the Belkian proposals and their capacity to offer new insights amid technological disruptions. It is not easy to survive outside the Matrix in the transhumanist era. To reinforce my arguments, Table 12 offers an addendum to the alternative modes of investigation for the self.

	Extended Self	**Interactive Self**	**Expanded Self**	**Extended Mind**	**Multiple Selves**	**ANT**
Person Focus	Individual	Cyborgs	Individual	Individual Mind	Multiple Facets of Self	Multiple Individuals
Object Focus	Possessions & Brands	Digital Devices & Data	Brands	Objects in the Environment	Objects & Actions	Objects & Possessions
Relation to Objects	Emotional Attachment	Functional, Aesthetic, and Magical	Love/Hate	Functional	Emotional Attachment	Emotional or Functional
Relation to Self	Extension	Extension & Incorporation	Inclusion	Cognitive Incorporation	Inclusion or Extension	Behavioral Interaction

Table 12 - Alternatives for the Interactive Self.
Source: Based on Belk (2014c).

Another contribution of this research to identity projects in consumer research has its roots in the ontological condition of humans and non-humans, framed by the notion of speciesism, specifically anthropocentrism (Ferrando, 2019; Haraway, 1985; Latimer, 2017; Schmitt, 2019). As highlighted by Singer (1975/2009, p. 42), the concept relates to "a prejudice or attitude of bias in favor of the interests of members of one's own species and against those of members of other species." With the rise of AI, robots, cyborgs, and other forms of artificial and sentient beings (Belk, 2020; Belk et al., 2020; Boden, 1996; Boss, 2020; Ferrando, 2020b; Kriegman et al., 2020), it is plausible to argue that we must be open to exploring their known unknowns and unknown unknowns. This scenario will lead us to rethink what it means to be humans, machines, avatars, consumers, consumed, product, disposable, vessel, animal, sacred, profane, tangible, intangible, organic, inorganic, pure, hybrid. The list is intentionally long when it comes to identity discussions within Transhumanism and its several variants. As emphasized by Davis et al. (2020), the digital universe offers unlimited opportunities for consumers to explore parts and dimensions of their subjectivity, because sometimes, they may not be comfortable sharing offline. In this sense, emerging identities, experimentations, fluidity, and heavy interactivity are marks of the transhumanist era for identity building.

Without a doubt, discussions about identity, regardless of their ontological aspects, need to advance from dualistic, androcentric, reductionist, and perverse positions (Haraway, 1985; Latimer, 2017; Wolfe, 2018). Thanks to Prometheus' act, we are many and colorful—this is beautiful. That is why I argue that consumer researchers must embrace different onto-epistemological perspectives to explore the diversity of phenomenon that the human-technology symbiosis brings about (Case, 2014; Ferrando, 2019, 2020b; Hables-Gray et al., 1995; Hrynkow, 2020; Warwick, 2014). There is no turning back after taking the red pill, as Morpheus warned. From a sociosemiotics perspective (Landowski, 1997, 2005), instead of observing fixed semantic axes on the semiotic square (Greimas, 1983a) to discuss distinct identities, as well as new ontologies, we should also consider fluid trajectories. If we consider cyborgs and criticized binary systems, the discussion about the phenomenology of being-in-the-world should be as liquid as the *continuum* of almost 50 possibilities of gender and sexual orientation in the dating app Tinder (Gallagher, 2019). In other words, the idea of a core and ontological

immutability of something is not consistent with the cyborg's existential condition, which means that we are always in the process of becoming *in* and *with* the world over time.

Despite criticisms about existentialism in consumer research, Sartre's contribution is far more than his former agentic view of the human being (Eshleman and Mui, 2020; Flynn, 2014; Kleinherenbrink and Gusman, 2018; Poellner, 2015). As emphasized by Fox (2020, p. 487), "Modern philosophers have found an easy recipe to portray Sartre: focus on the only text he repudiated, *Existentialism is a Humanism*; throw in a few passages from *Being and Nothingness* regarding absolute freedom [...] and the bitter spice of 'hell is other people.'" Bringing different phases of Sartre to contemporary debates, such as posthumanity and transhumanity (Belk, 2018a; Birnbacher, 2008; Butterfield, 2012; Eshleman and Mui, 2020), may be an attempt to disconnect the philosopher's thoughts from his former associations with Cartesian metaphysics. As I did in this doctoral thesis, Sartre's latter works should be taken into consideration to explore, the corporeality of consumers, for instance, based on his dialectical ontology. In this regard, the person is seen as "wholly matter" and, as an organism, symbiotically connected to its environment in a reciprocal dialectical process (Sartre, 1960/1976). Furthermore, the Sartrean philosophy could help us to better understand structure-agency tensions since "man [sic] must be controlled by insofar as he *creates* it, and *create* it insofar as he is controlled by it" (Sartre, 1960/1976, p. 35).

5.3. Theoretical implications for Transhumanism studies

As the last contribution to consumer research, I would like to zoom out of the discussion and shed some light on parenthood framed by a bioethics perspective (Buchanan, 2011; Habermas, 2003; Hall, 2017; Hastings, 2019; Koch, 2010; Koplin and Massie, 2020). As seen in several prior consumer researches (e.g., Bertol et al., 2017; Bettany and Kerrane, 2016; Geiger and Gross, 2019; Perez et al., 2019), parents are entangled with a variety of forms of digital devices and data management. With a few exceptions (e.g., Fischer et al., 2007; Takhar and Houston, 2019), studies usually tend only to address human life after birth, and technologies

that are used as a tool to perform a task, baby wearable devices being examples of this (Wang et al., 2017).

Presumably, at first, I own my body parts and have rights on that matter, which implies that I am free to modify my existential condition as I see fit, as long as it does not harm others. Assuming that premise, hypothetically, any volitional cyborgization at the somatic level (non-heritable) upon myself, such as the installation of an NFC microchip, would be ethically acceptable. On considering the role of parents or legal guardians of a child or teenager, I wonder where the freedom to choose lies when regarding the need for a microchip. Bearing in mind the meanings of coolness (Belk et al., 2010), AirPods are cool today but not necessarily tomorrow. Microchips are unknown today, but not necessarily tomorrow. Since this is an Identity-Enabler Object and not a simple "magical commodity," how should this be treated in terms of regulations that aim to protect children's rights? Who should decide if someone may or may not be what/who they desire to be? Perhaps, the next wave of cool may involve the transfer of data directly from inside someone's body to that of a friend's body. In a transgressive act of transcendence, once again hypothetically, an adolescent could rush to the internet, buy a microchip, and self-install it. From that moment on, can human rights still be applicable to the resulting new ontological condition? Is there, hence, a cyborg bill of rights that encompasses both physical and digital activities? If the adolescent's microchip is infected with a malicious virus and unintentionally happens to infect a friend's smartphone, who or what is to be held guilty?

From a consumer research perspective, specially framed by Transformative Consumer Research (Mick et al., 2011) and Participatory Action Research (Ozanne and Saatcioglu, 2008) premises, this doctoral research may contribute more to eliciting unprecedented sensitive issues rather than offer avenues for definitive findings. As invoked in recent calls for papers on transhumanism and consumption practices (e.g., Belk, 2020; Schmitt, 2019; Takhar et al., 2019), this study may contribute to the scrutinization of the limits of our own sense of limits, as well as the limits of the limits, when it comes to the notion of humanity and the freedom *to be, to have*, and *to do* (Askegaard and Linnet, 2011; Porter, 2017; Sartre, 1957/1968, 1956/1978, 1960/1976, 1985/1991; Sheehan and Sosna, 1991; Thompson, 2017a). There is always a Konami Code to be used. It is just a matter of accessing the right URL on the internet or, in the worst-case scenario, the Deep

Web. As the last question on this matter: regardless of the motive, should parents or legal guardians have the right to have their children chipped without their consent?

Shifting the discussion to an even broader level, but still within the frame of the bioethics perspective and ownership, I own my spermatozoids, and I know the possibilities of diseases in my family. My wife also owns her uterus and also has a medical history. By changing the volitional cyborgization by grinding and moving through the *continuum* to a more biochemical-based condition, as seen in Figure 11, there is the possibility of gene modification. Would cyborgization by CRISPR, for an inexistent child to not suffer migraines, be a case of transgression since there is interference at the germline level (heritable) (Ranisch, 2020)? Or, what if, overtaken by love, a decision is made by a parent to improve the future child through cognitive and intelligence enhancement (Aguilar, 2012; Porter, 2017)? This would be an act of love and transcendence from a parental perspective, right? Or not? It is already possible to purchase higher probability sets of traits for the not yet existing zygote, such as black or green eyes, brown or white skin, height, more or lesser chances of becoming bald, or a stronger immunity system, to name a few. Therefore, before the fertilization, or even the birth occasion, who owns the genetic material that may be used to conceive a life?

As the last point on the ownership perspective, a three-parent IVF technique, which fertilizes both mother (compromised) and donor's (healthy) eggs with the father sperm, has recently emerged as a possibility in the health marketplace (Liao, 2019; Rulli, 2016). Here, it is interesting to consider the principle of genetic affinity and the desire for biological connections with the child as a point for discussion (Pompei and Pompei, 2019). When the procedure goes as planned, the desired parenthood may be attained (Fischer et al., 2007), however, when the genetic manipulation fails, the repercussions can be disastrous. As an example, a Singaporean couple, after a few months of their child's birth, realized that their ethnicity did not match with the baby's appearance. Shortly after, on discovering that a mixture of genetic material with the wrong donor's sperm was used, the parents were led to sue the clinic in Singapore's highest court (ACB v Thomson Medical Pte Ltd and Others, 2017; Schaefer and Labude, 2017). Is this a case of the commodification of a human being via the engineering of life (Hartman, 2016;

Hartman and Coslor, 2019; Manzocco, 2019)? What would the psychosocial consequences be for the family, especially for the child?

From a critical standpoint, the possible outcomes of these choices may encompass eugenics (Agar, 2019; Ranisch, 2019), unknown psychiatric side effects (Ormel et al., 2019), stigmatization (Goffman, 1963; Ruvio and Belk, 2018), social exploitation masked by biocapitalist discourses of progress (Johnston, 2019; Le Dévédec, 2018, 2019), and even new forms of modern coloniality (Ferrando, 2020a; Quijano, 2007). After all, Mars is over there, and tickets for the first explorers are around US$ 500,000 (Clifford, 2019). Having that in mind, future endeavors should embrace promises, perils, and consequences of consumers' freedom and choices on becoming cyborgs at the individual, family, community, and group levels (Belk, 1988), so a deeper understanding of transgressive or transcendent cyborgization in the transhumanist era can originate. Recalling Morpheus's promise, consumer researchers should be open to observing how deep the rabbit-hole goes, even if it is dark and terrifying.

6.
Chapter: Concluding remarks

When Neo was shown the reality by Morpheus, he was disbelieving, confused, and scared. Sometimes, we may have a fear of the unknown, the repressed, the heretical, and the undeveloped for several reasons (Jung, 1959a), as in the case of cyborgs (Lima et al., [s.d.]). Amal Graasftra's TEDx talk as the opening vignette of this research illustrates our current existential condition relating to technologies and the mutual dependency. Even for the father of cybernetics, Norbert Wiener, the boundaries between humans, technologies, and God are not easily discussed. To control or to be controlled, to worship or to be worshiped, to be alive or to be dead, are all subjects of Wiener's (1963/2019) three major concerns given his own creation: machines can learn continually; machines will be able to self-reproduction; machines and humans must relate to each other in a creative rather than a destructive manner. The following example in Figure 43 shows the psychosocial effects of this complex scenario.

Figure 43 - Scene from the TV show *Years and Years*.
Source: BBC (2019).

To date, the TV show Years and Years is one of the best consumer culture manifestations that directly addresses the volitional cyborgization within the

Sartrean dialectical perspective, considered in my research. The abovementioned scene, specifically portrays the struggles lived by the young Bethany while telling her parents that she is trans. Not transsexual but transhuman. At first, listening carefully and with an open heart, her parents embraced the transsexuality possibility with love. After explaining her wish to become data by a mind uploading procedure, with no gender, sex nor color, and by disposing of the material body, and losing human traces, the parents became perplexed. Then, a state of dismay heavily beset them. This transhumanist-inspired plot highlights all of the promises and perils of merging with machines, in a way that it is impossible to be sure about the former utopian view of Huxley (1957) or the dystopian one depicted in Brave New World novel (Huxley, 1932/2010). In this confusing setting, the possibilities of a euphoric or dysphoric outcome are as fuzzy as what it means to be a machine-like human or a human-like machine.

Given that the starting point of my chosen phenomenon is the human who consumes insideable technology by means of microchip installation, it is plausible to inquire about the existential project behind it. Avoiding the usual Heideggerian approach to technology studies, I propose the careful observation of the way we come to being in this world, and not just our existence in it. My argument is that technology is *us* and not *ours*. Just like Merleau-Ponty's (1981, p. 152) blind man and the stick representation: "the stick is no longer an object perceived by the blind man, but an instrument with which he perceives." This recaptures the claim that we are "natural-born cyborgs" (Clark, 2004), and Musk's (2018) statement that "your phone is already an extension of you. You're already a cyborg. Most people don't realize you're already a cyborg."

My proposal for the Interactive Self and its dimensions can be considered another perspective by which to observe insideable technology consumption and identity construction, especially if the case involves the externalization of the internal and the internalization of the external. That is, if the consumption has the aspect of extension & incorporation at the same time, not only at the symbolic level but also at the physical and digital, the novel concept is an alternative. Having that in mind, I may claim, once again, that *we, as cyborgs, are not only the sum of our insideable technologies, such as microchips, but also the sum of our interactions with external digital devices to exchange data over time*.

At this point I must confess that, by literally merging with technology and seeing what is possible to do, it may lead us to provide some evidence for The Simulation Argument (Bostrom, 2003). Simply put, the idea is based on the premise of a supreme strong AI that controls our lives in a computer simulation, such as in The Matrix movie. If and when we merge with it (Chorost, 2011; Kurzweil, 2006; Musk, 2019; Tbalvandany et al., 2019), we may or may not validate this proposition, which is backed by several scholars and prominent names in the technology industry (e.g., David Chalmers, Elon Musk, Rizwan Virk, Rich Terrile). Is it really possible or is it just another Black Mirror episode? As affirmed in some parts of the West, "Only God(s) know(s)."

As we are possibly moving towards a Posthuman era, matching the Anthropocene perspective, (Belk, 2018a; Braidotti and Hlavajova, 2018; Ellis, 2018; Ferrando, 2019, 2020b; Hayles, 1999; Ranisch and Sorgner, 2015), in which ontological asymmetries among beings will no longer be an issue, several questions come to my mind. How can humans attain the desire for transcendence if they are not allowed to do it? How can humans be positively sanctioned if dice keep being rolled by nature and gods? How can we achieve the next step of evolution if symbolic and concrete walls are constantly being built? After all, humanity has a clear promise of a special place provided by the gods for those who transcend: Nirvana, Heaven, Valhalla, Elysian Fields, among others. However, the former Konami Code sequence is ↑ ↑ ↓ ↓ ← →← → B A (Start), so, if you desire transcendence, a little bit of transgression may be required. In the words of Doktor Sleepless: "No-one thinks they owe you shit. You're waiting for a day that'll never fucking dawn...Grinding... Becoming someone else." (Ellis, 2008).

7.
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