# Binary Faust: the natural and the artificial in analog and digital sounds

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## Abstract

This paper discusses the complex relationships between the current digital culture and contemporary technoscientific thought, guided by Information Technologies (ITs) model. We describe how this kind of thought has been structured as an internalized modern self arises, with a view of the world as an intellectual construct. We use the universes and discourses about the digital and analog sounds as an example of the Faustian and Promethean ideals of technologies, concepts proposed by the sociologist Hermínio Martins.

**Keywords**

Digital culture. Digital sound. Information Technologies. Technological gnosticism. Modern self.

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## 1 Introduction

Digital technologies and their multiple developments in contemporary society have become so present, so inevitable, that we can hardly live without or even do without – at different levels – such apparatuses. Such is the force with which they have become part of our daily lives that are often overlooked, as if they were a natural part of our environment. They are accompanied by terms having an equally problematic definition, such as: "virtual", "information", "computer"; as well as other more ephemeral ones, but which also regulate our relationship with this new reality: "connectivity", "interactivity", etc. The prefixes "tele", "net", "e-", "i-" and similar ones inhabit the market, but they are also found at large in the academic world, in attempts to describe complex phenomena still in the forming stage.

Since it covers such a wide range of meanings and travels in such a vast universe, the term "digital" often ends up assuming a character almost of ontology of nowadays. Although not

all communication processes or all activities of other areas can be summarily reduced to a digital operation, it increasingly presents itself as the ultimate model of efficiency and inevitable destiny of all human practices

We believe that, however different and numerous its developments are, due to its congenital inclination to homogenization of processes, the digital can reveal some of its vicissitudes through one of these practices, very close to most people, which is musical listening. Since it stretches in several directions and dialogues with areas such as market, artistic production, human sciences or hard sciences, the recorded sound may be useful to begin our discussion. It is not an attempt to exhaust the subject of the relationship between the new audio technologies and our positioning regarding this new digital culture, but to identify how our activities have been transformed over time with the introduction of new technological paradigms.

In a paper published in 2008, Emily Yochim and Megan Biddinger, from a survey with consumers of CDs and vinyl records, make an analysis of the discourse of those who defend the analog sound as something more natural, a richer experience if compared to the digital sound of CDs.

One of the main criticisms of the transition process from analog sound to digital sound is that the latter would not accurately reproduce every nuance of the former's continuous signal.

The arguments for such justification included the following: a) the analog sound is "warmer", more "alive"; b) the vinyl record presents more tangible qualities, both in relation to its materiality (its cover, its own handling) and in terms of the nature of its sound, associated with its surface imperfections (crackles and hiss); c) the analog sound is more true to the original.

From these arguments, among other less mentioned ones, we can identify some recurrent and symptomatic characteristics of a particular school of thought that initially would present an opposition between something natural (original) and something artificial (constructed). The valuation of the original or natural object to the detriment of that conceived through technical and scientific procedures, however strict they are, can be seen as starting from specific groups less and less associated with the large market (not just music, but in terms of almost every type of consumer product).

This does not mean that this kind of fascination for the original, for the natural or for the non-technological is not present, though as a counterpoint, in more general discussions about our relationship with technologies and about our own constitution as human beings. It also does not preclude the idea of "natural" from continuing to be mentioned, even in contexts of high technological intervention.

Building on arguments related to the universe of music and sound in general, we intend

to demonstrate points of convergence between a current valuation of the "digital" object and a new way of thinking about the relationship between man and nature or even the changes in the very idea of human. By using the definitions of a Promethean model and Faustian a model of relationship with technologies, as proposed by Hermínio Martins (1996, 2005), we will try to identify, in this fetish of the digital, elements that support or question the ethical and moral paradigm changes identified in current technologies.

## 2 The analog as nature

In 1860, Édouard-Léon Scott de Martinville prints on a sheet of paper covered with soot from a kerosene lamp the marks produced by the sound of a folk song (*Au clair de la lune*). The sound waves were captured by a cone and "written" by using a small rod or needle attached to a diaphragm sensitive to vibrations. There was no way to play back the recording. It would be preserved on a surface longer than its ethereal original duration of ten seconds, but in the form of a visual record. It was not planned that it could be presented again as sound.

In 2008, from the digital scanning of the marks, scientists at the Lawrence Berkeley National Laboratory, in California, brought to life the almost one-hundred-and-fifty-year-old piece of music, until now the oldest human voice recording that is known. "When I first heard the recording as you hear it [now]… it was magical, so ethereal", says the sound history researcher David Giovannoni, one of the persons responsible for the feat. "The fact is it's recorded in smoke. The voice is coming out from behind this screen of aural smoke." (OLDEST..., 2008).

Completing these almost mystical considerations about the resurrection of ancient voices, the online edition of The New York Times of March 27, 2008 compares the feat to a "hunt for the sound Holy Grail" (ROSEN, 2008). The digital, represented here by a "virtual needle", managed to recompose, order a body doomed to oblivion by the technical impossibility of its translation into current media. In fact, as it was said, this was not even a hypothesis raised by Léon Scott. "There is an epistemic gap between us and Léon Scott, because he thought the way to get to the truth of sound is looking at it", says Jonathan Sterne in the same story of The New York Times. Besides the common association of the real to what we can see, we also have the idea of control through the visual. The invisibility of sound would make it less susceptible to manipulation and, as a result, would diminish its scientific importance. Don Ihde (2007, p. 54) reminds us that the validation of knowledge usually occurs through its translation into visible parameters. Accordingly, technologies like radar, oscillographs or frequency maps are nothing more than translations for pictures of sound nature information. "In the case of sound sciences, that translation allows the sound to be measured, and measurement is predominantly a matter of spatializing qualities in visible quantities."

When Sterne tells us about that "epistemic gap" between an exclusive validation of the order of visual and a better understanding of the synergies between the different senses in the perceptual process, as it is more common to think about today, maybe this is due in part to a dominant interpretive tradition in the Humanities in the 19th century. This hermeneutic stance, under great influence of Wilhem Dilthey,[1] has affected the *Geisteswissenschaften* (sciences of the spirit), reinforcing the separation between the spiritual and material – as an offshoot of the Cartesian split between subject and object – and seeking in things a meaning hidden beneath the surface of form, reachable only through an exegesis. Descartes' *cogito* and the scientific thought, in general, were some of the strongest translations of this exegesis.

In the early days of mechanical sound recordings, there was a great influence of this kind of perspective when trying to describe the new technology. Before thinking of the enjoyment of recorded sound as an immediate experience, it was necessary to consider the possibility of translating this sound to something within the visual field. More than that, we should think of the recorded sound next to the language level. The musical language, in which the encoding of note pitches and durations, as elements of a score, was suitable to a transmission and mainly a preservation of ideas, would do just some part of

the job. However, it was not enough to accommodate the new recording and playback mechanisms in our listening universe. The idea of sound writing, wider than the pure and simple music writing, begins to gather breath. The phonograph has emerged as a tool for offices and courts, able to record and play messages quickly and efficiently, playing the role of a stenographer. Foreseeing his invention, Edison wrote in his notebook about the possibility to "store up and reproduce automatically at any future time the human voice perfectly" (*apud* GITELMAN, 1999, p. 2). At the same time, the recorded sound produced effects of almost mystical nature: it would bring back the voices of the dead. This possibility can be found in an excerpt from the article 'The talking phonograph', published in the Scientific American issue of December 1877, as quoted by Gitelman (1999, p. 21):

We have already pointed out the amazing possibility of hearing the voices of the dead through this device, and there is no doubt that its capabilities are similar to other results that are also wonderful. When it becomes possible, as no doubt it will, to expand the sound, the voices of singers like Parepa and Titiens will not die with them, but will remain as long as the metal in which they can be built in lasts.

Despite an impulse of translating the sound into something like written, an alphabet that

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[1] German philosopher of the late 19th century and early 20th century, known for his distinction between Natural Sciences and Humanities. While the former aimed at explanations through laws, the latter described the human life through historical bias. His posture was influential on 20th century thinkers, like Heidegger.

allowed it to be fully understood and handled, the sound recording presented strong arguments that hindered its reduction to a purely textual sphere. The concern of transcendental order – preserve and revive the voices of the dead – was one of them. The material substrate anchored possibilities of metaphysical character and that made the difference.

The recorded sound, due to its duality between something elusive and ethereal and something at the same time necessarily attached to a solid surface, has witnessed, throughout its history, heated discussions about its true role or about its relationship with the real recorded objects. Would sound be a faithful copy of reality? Would mechanical recordings be nothing more than constructs based on narratives given by technologies themselves? One way or another, the eternal rapprochement between recording and the so-called "real", which appeared ready to be captured, is symptomatic. The character of mimesis presented by technologies like the photograph, the phonograph or the cinematograph, in the late 19th and early 20th century, was eventually appropriated by a discourse that was based on arguments such as fidelity, naturalness, the direct relationship between original and copy.

The labeling processes, textual assumptions of new media that, like the phonograph, escaped the exclusively interpretive understanding, were also contaminated by these categories. Labeling

was used, among other purposes, to present to consumers what they were listening to. Who was the singer, who was responsible for the recording, who had the legal right to sell that product. Initially, as a way of bridging the gap between the laboratory and the market, the labels, in their different forms, were also imbued with a material nature. After all, they were also stuck to a surface, written in a film or printed on a wax disc. By confirming what was actually heard in the recording, labels helped build the sense of fidelity, making the idea of "nature" a powerful certificate in the Western culture. "Products have become particularly valuable if they could be characterized as 'real', 'genuine' or 'natural'" (GITELMAN, 1999, p. 153).

In its analog form, sound has always found alternatives to its domestication by language, even in the strong presence of textual dimensions. As shown by Charles Taylor (1997), the 18th century witnessed an intensification of the constructive powers of language, as the result of a gradual shift from moral sources still guided by their relationship with ideas outside man himself to a modern, internalized self.

## 3 The internalized scientific spirit

Taylor guides us in a process of constitution of what he calls modern self as a form of self-interpretation historically formed and that has become predominant in the West. This model is based primarily on an opposition between internal

and external aspects. Accordingly, thoughts, ideas and emotions are within the human being, often in specific parts of the body, like the head or the heart. "Outside" us are the objects with which we should relate in order to develop our capabilities, our powers, always inside. Within this division of the world, many were the means to question nature so that we could better understand it and, therefore, better understand ourselves. The technique, manifested in the creation of devices and tools, well suited to the purpose of controlling the natural spheres. The very notion of "human civilization", as pointed out by Keith Thomas (1988), is inseparable from the conquest of nature.

But before we reach a more instrumental stage, so we could say, in this relationship between nature and technology, Taylor introduces us to what would be a first step in this journey of formation of the internalized individual under the rule of reason. The Platonic self-control preaches that the human must be governed by an instance of thought, more clearly the reason, and not be swayed by feelings. The reason in control would put us in line with a greater good that can be found in the universe, outside us. Wishes would lead us to chaos, to a disorderly world. The thought/reason duo, always struggling with passions, orders our lives for good. This ethic of reason and reflection, from Plato, becomes very influential. Other ethical standards, such as the warrior's morality, which aimed at action and glory, begin to deserve less importance. The sense of unity of modern man owes much to the

control of self by reason. While the warrior was taken to perform grand acts by an energy incited in him by superior forces, the reflective man is self-controlled. "Plato offers us a vision of moral sources. He tells us where we can go to get access to a higher moral status. And we could say that the place he shows us is the domain of thought." (TAYLOR, 1997, p. 155).

From a reflexive relationship with the world around it, but still complying with an order external to itself, the modern self next begins to regard nature as something that should be described according to some logic internal to man. Galileo advocates a representative description of the world, which would be one of the foundations of scientific knowledge. We need a "correct" representation of things. What guarantees the correction of this description is the method which, for Descartes, is the only way to have access to what is outside us. The reality as self-revealing, as found in the Platonic ideas, no longer fits the modern scientific discourse. The representation of reality is now the responsibility of man himself. The "idea" abandons its ontic sense, of belonging to things, and enters intrapsychic regions. The activity of describing the world is carried out internally, as something that is constructed and not discovered.

The Cartesian thought, likewise, takes away the materiality from objects. These can no longer be known in our physical contact or from our imagination. "We only conceive the bodies through

the faculty of understanding that exists in us and not through imagination or the senses, and [...] we do not know them because we see them or touch them, but only because we conceive them through thought" (DESCARTES, 1988, p. 30). Disenchanted, seen as mechanisms deprived of spiritual or expressive dimensions and to which the mind should assign meanings, objects become part of a large map organized by the intellect. If such a map could be drawn, of course it would also be the target of readings. The possibility of interpreting the world through purely mental structures puts the common experience, based on our physical perceptions as undesirable. The body would be something less important in the relationship with the world.

According to Taylor, this new attitude toward reason and its increasingly greater control brings an internalization of moral sources. This time, the body, the passions, the world, everything is subject to rational control. The universe is no longer the place of an order above any questions, which we should love and admire. The order is also envisioned from our reflective work. The *cogito* replaces the uncertainty of the senses. The substance gives rise to the instrumental procedure of science and the purpose of the latter still was the control of nature.

Another important contribution to the development of this modern scientific thought, increasingly separated from judgments about good and evil, can be found in John Locke, when he tells us that there is no natural inclination of man to one or the other. The "truth", other than postulated by Plato or the Stoics, is not written in the order of the universe and neither have we a natural tendency to discover it. Our conceptions of the world are the result of a synthesis process that starts with our feelings and thoughts. The passions, habits and education can also harm us in the act of creating this knowledge. What Locke proposes is the suspension of beliefs inculcated by tradition. We must not blindly believe in notions that seem solid and unquestionable. We must redo our worldview by following reliable concatenation rules. Accordingly, Locke does not propose a new organization of thought or a different model of instrumentalization of the world. He radicalizes the method by making it reflect about itself. "Locke's theory generates and also reflects an ideal of independence and self-responsibility, a notion of reason as something free from the established custom and the local dominant authority." (TAYLOR, 1997, p. 219)

The exacerbation of subjectivity as emerged in the Platonic model of self-control and expanded by the Cartesian *cogito* paradoxically results in a denial of that subjectivity. The objectification of things and knowledge construction processes themselves tends to see the world and man from an outer point of view. Objectivity claims an absence of any subjectivity interposed in the scientific method path. Scientific rigor, based on a third-person perspective, arises from the first-person centrality.

The correct description of a reality independent of our moral and ethical assumptions, based on rigorous procedures, has brought in itself an affirmation of language as a tool for constructing this reality. The 18th century witnessed, as already mentioned, the affirmation of hermeneutical models of understanding of nature, in which the translation and systematization of the world in texts, codes and maps was part of a larger process of internalization of the modern self. At the same time, besides the need for a faithful representation of the world, language as apprehension of reality carries the expression of the human within the world. By describing things, developing codes to translate the surroundings, man describes himself.

## 4 The digital as a universal language

The mystical side evoked by the record of sounds, specially the voice, resembles, in some aspects, the same wonder that digital technologies have caused by proposing an obsolescence of the body. The body seems something separated, or capable of being separated, from what we really are. By enabling the human voice to be removed from the body and placed in a machine, the sound recording technologies would have made possible, as suggested by Hayles (1999), the dream of the advocates of a growing technological Gnosticism.

This Gnosticism, described by Hermínio Martins as an inclination to see in technologies possibilities of overcoming the biological

limits of the body, as well as solving worldly existential problems, was very well received in the context of virtual and/or information technologies. The new scientific paradigm established by cybernetics between 1943 and 1954 by researchers like Norbert Wiener, set a parity between the functioning of the brain and the functioning of computers. Objects, seen as information converted into a binary code and free from the weight of matter, could be more easily transmitted, stored and handled. Running through mathematical patterns, the information model would show greater flexibility and less fallibility than if done through analog processes. Going further, the self-reflection of the digital, where automated operations would increasingly take control of other operations, creating different levels of processing in a kind of heuristic electronics, dispense with the assumptions we bring unconsciously, as Locke had predicted. It opens the way for the development of artificial intelligence.

When delegating the responsibility not only for the processing, but for the choice, we understand that the machine, here represented by the digital language, can provide us with more reliable knowledge. It makes use of patterns that can automatically adapt to new situations emerged, giving more appropriate answers. And, as we saw in the evolution of scientific thought, knowledge production means a more efficient control over the natural realm. The digital would allow us gaining an unquestioned ascendancy over the matter.

Seemingly opposites, mysticism and scientism emerge as complementary nowadays. The technologies of virtual combine religious meanings with a quest for knowledge of profane character. The information, a new face of this knowledge, and its ubiquitous, universal and totalizing character justly embody the imagination of a world under the control of language. If, as argued by authors such as Friedrich Kittler (1999), the new media, understood as computing technologies, tends to treat any event in a homogenizing manner, we can really provide the replacement of the idea of media for something less contaminated by material references. As Kittler says (1999, p. 1-2):

> Inside the computers themselves, everything becomes a number: quantity without image, sound or voice. And, when networks of fiber optics transform the formerly distinct data flows into a standardized series of digitized numbers, any medium can be translated into another medium.

The digitized sound, converted into a series of 0s and 1s, is no longer subject to the conditions of matter when played. The tape hiss, the record scratches, and the saturation of the magnetic particles no longer provide a barrier to the "faithful reproduction" of the original object. Free from this mark of the analog medium, we have the illusion of being introduced to the wholeness of the original event, to the sound as it is naturally. Here, it seems contradictory that natural is still a value attribute for something

that becomes more and more "artificial" and that this "artificial" proclaims its allegiance or fidelity to the "natural". Understanding, from common sense, this artificiality as an increasingly intense technological mediation, we must take a careful look at the fact that contemporary devices, like touch screens, 3D images, surround sound systems with increasingly convincing tactile effects, may use the appeal of real, the immediate contact with the objects represented. Perhaps we should believe that however strong the discourse of obsolescence of the body or the immediate experience is, these remain our strongest references in the recognition of the world. Or, in a somewhat opposite way, we can glimpse an attempt to replace this "real" for something "more than real", more subject to control[2]. Thus, the concept of hypermediation, as proposed by Bolter and Gruisin (2000), would make total sense in a synthesized universe, capable of providing close-to-real experiences – sometimes higher. As a matter of fact, the objective would be to refine the synthesized experiments to the point of no longer differentiating them from the real ones. Further, to the point where the reference to real experiences would no longer be necessary. We would come to a point where instrumentalization, the scientific method would assume such an independence that the questioning about its veracity or not would no longer be necessary. It would no longer be needed to question about the fidelity of its representation of nature, since nature

[2] Baudrillard (1991, p. 8) would call it the hyperreal, "a product of synthesis radiating combinatorial models in a hyperspace without atmosphere".

would no longer be a *sine qua non* parameter. We would be facing a "new" nature.

On the other hand, what we can still perceive is some dependence on physiological models and on our direct ways of apprehending reality, although to inspire technological devices that can recreate that same reality for us and in our place.

Jonathan Sterne, when addressing the mp3 digital sound file format, defines it as an embodied sound technology. Aiming to provide listeners with only what they would naturally listen to under normal conditions, it relies on psychoacoustic principles to engineer its data compression algorithms. The concept of "virtual", a kind of ontological dimension of digital media, is usually seen as a modern and radical form of separation between subject and body. From devices like mp3, this limiting axiom can not describe clearly and fully the relationships arising with new technologies. According to Sterne (2010, p. 84), mp3 would pose a greater challenge to the concept of virtuality precisely because it avails itself of the interaction with the body and with its biological principles of apprehending reality for recreating a direct experience. The relationship of the mp3 sound with the matter does not occur at the support level; it boils down to memory space in hard disks, players, etc. The important matter for the realization of the mp3 is the corporeal matter. The mathematical table encoded in the mp3 suggests "a concurrence of signals between computers, electrical components and auditory nerves".

Accordingly, the contemporary technological Gnosticism, given the different bets and uncertainty of a field still under construction, seems to assume a character not so assertive about the role of the body and the natural perceptions in virtual simulation environments. Despite this apparent flexibility, the project of total control of nature persists. A somewhat different facet which presents itself at this moment is the digital reconstruction of this body. This ambitious project aims to definitely supplant the impossibilities presented by matter - mainly the biological – for its translation into information. Let's think how the Promethean and Faustian discourses of technology work.

## 5 The Faustian ideas and the Promethean ideas

Procedures based on the concepts like information, computing, digital (versus analog), processing, software and hardware, etc., have become quite common nowadays, as we said at the beginning of the text. In fact, there is almost a suspicion of inefficiency in any activity that does not use any of these jargons. Over the last decades, this discourse has come to occupy a prominent position, modifying even the sciences and technologies that were intended to be sources of development and welfare of the human being, this seen as necessarily linked to nature. The universality of the ideas of this new technoscience, applying to fields such as engineering, medicine, law, entertainment, etc.,

perhaps is unprecedented. It has penetrated our daily practices and our imagination. In the words of Hermínio Martins, the era of "universal cyberdiscourse", along with the "market discourse", should "continue to expand for some time yet, through our social world and our *globus intellectuallis*" (MARTINS, 2005, p. 165-166).

This ubiquity of information technologies that, in turn, are based on the need for coding in a digital model of any object turns them into a sort of meta-technology. All areas of knowledge, from Natural Sciences or Humanities to those more directly related to the specific type of instrumentality of virtual simulations and the like, are currently under the spell of ITs. It is as if, still quoting Martins (2005, p. 168), all these areas "aspired to the status of a branch of engineering."

Martins identifies in this movement of contemporary technoscience a change in the model of technology deeply grounded in the embodied human being. This model, which the author calls "technological somatism", had already been described by German philosopher Ernst Kapp in his *Organprojektion*, a book that describes technologies as analogies to human body parts. This "prosthetic theory of technology" regarded technical artifacts as a key to the study of human nature. Thus, technological metaphors would be crucial to our self-interpretation. For Kapp (2007), technical artifacts would be the expression of the unconscious of man, and also importantly, would keep an indissoluble relationship with the human body.

Currently, this unconscious would have been replaced by information processing systems. The human body is no longer the analog reference to every form of invention and also becomes the target of a restructuring process. Even those areas more hardly related to the logical procedures of hard sciences, such as medicine, eventually succumb to the wishes of simulation and forecasting of ITs. Organic life, once a complex base on which explanatory theories were formulated, now underlies the mechanistic model of virtual simulations and recreations.

The "technological Gnosticism" that has replaced the "technological somatism" brings the promise of more efficient bodies, tailored to the needs arising from the existence of these technologies in an endless spiral. The contemporary technoscience is not mirrored in natural patterns or patterns provided by previous models. It creates them from its own rhetoric. Once the body (and nature) disappears from the horizon of these speculations, it can be stated that the main concern of such technologies is not only to solve imperfections or contribute to a better adaptation to the environment. These are secondary results. The pride of the new technoscience is to recreate the world according to a look external to man. External because it should be exempt of human error. The machine, running the software that essentially works under the aegis of mathematical logic, is not subject to errors. And, where the human being's finite processing capacity (and this is

a term characteristic to machines) is unable to proceed, the virtually unlimited speed of silicon processors takes over.

While the Promethean character of modern scientific thought bet on the improvement of living conditions through a technological development, and there was no other more important reason, new technologies demonstrate a Faustian face, in which the technique fetish overlaps for merely productive purposes.

The former makes a blind bet on rationality, which is heir of models such as positivism or classical Marxism. The Faustian project, intoxicated by the absence of limits advocated by the virtual technologies, erases from its borders the advantages of this rationality both in sciences and in history. Accordingly, a computational metaphysics that does not want to be a prisoner of natural determinations, a recreation of the very idea of human through information, is established. We are before deep changes not only of a technological nature, but also in terms of our self-references:

> The historian of ideas B. Mazlish has long advocated the thesis that the emergence of non-biological intelligence, approaching the human level and surpassing it, involves a discontinuity in self-image so deep, so wide in its field of implications, capable of causing a revolution comparable to the Copernican overthrow of our central post in the universe, to Darwin's establishment of our continuity with the animal kingdom, or to Freud's discovery, or at least glimpse, of the depths of submerged

world of human motivation and mental activity (MARTINS, 2005, p. 180).

The computer-assisted simulation, be it of physical events, material objects, perceptual data or processes of cognition, has been treated as a new kind of science. It has supplanted the old-fashioned method of theory and physical experimentation as well as the historical-natural knowledge of Humanities and Social Sciences. The convergence between ITs and the current technoscientific discourse is so big, due to the magnitude of the crossing between formerly so different areas, that it becomes more difficult to pinpoint differences in procedures or even epistemological differences among them. Science, engineering, market, entertainment, etc., get increasingly mixed up.

## 6 Conclusion

The myth of the universal translation of nature through language finds comfortable shelter within the new information technologies. Not that this is a new fact, a strong interpretive current has always presented itself in previous moments of scientific thought. What is perhaps emerging as unusual data are the new relationships, not always well defined, between the ideas of natural and artificial. The position that nature, seen in the early days as a source of resources for survival, occupies in relation to technological models certainly demonstrates deep changes.

Nowadays, the technique has become the horizon on which the human experience is built. The world has come to be understood through the technique. This technique would define the way we should conduct our lives. "Then, we have witnessed a *transformation of subjectivity*: no more man as a *subject* and the technique as an *instrument* at his disposal, but the technique that uses nature as a reserve fund and man as its employee." (GALIMBERTI, 2006, p. 381).

This posture, as described by Heidegger (2007)[3], has become more pronounced, making the technical development as something that, in itself, would be enough to satisfy the needs of the States. Thus, the utilitarian view of technique is as abandoned as the very stamp of nature as the primary source of models.

The separation between *natural* and *artificial* – "on the one hand, the being that is principle of its movement; on the other hand, the human operations to use, mimic and expand the scope of the natural" (SIBILIA, 2002, p. 64) – seems to fade. A technology that proposes to be definitive, unlimited and omnipresent can not be guided by something precarious and finite like nature or biological life. In this sense, the claims of eternal life of the digital, not tied to definitive supports, always capable of providing identical copies and

subject to increasingly intense manipulation, are reasonable. The analog could then be related to the finite, to the gradual deterioration, to death. Yochim and Biddinger (2008, p. 183) exemplify this in their text:

> When vinyl collectors comment on the aesthetic, tactile and audio superiority of records, they're not just romanticizing the past, but establishing an abstract relationship between technology and mankind, by tying it to more concrete qualities. Throughout their history and at present, vinyl records have been linked to human characteristics like fallibility, warmth and mortality which, for recording enthusiasts, imbue the vinyl with authenticity.

The way technologies are rearticulated from practices already consolidated can represent a moment of relief from the stress of the eternally new and ethereal of ITs, but it does not fail to present a kind of mystification in relation to how we should enjoy this recorded sound. Defining a specific type of sound as more authentic, more "alive", faithful or natural are reinterpretations of terms that eventually work more in the imagination than necessarily in the immediate experience (knowing that this experience is always mediated by a very large symbolic burden). There is no genuine reason to say that analog sound is more true to its natural model, as well as one can not say the same for digital sound. Both are constructs that initially start from a strong reference (also constructed) to nature.

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[3] For Heidegger (2007, p. 383), the process of "unsheltering" part of nature, unlike the Greek *techné*, has an instrumental purpose that "essentializes" the object, makes it "subject to an order for a further order". Heidegger will call this position "subsistence" (*Bestand*), that is, subsisting in a set of objects equally made available to man. Unsheltering, bringing forward what was hidden, substantiates the producing. The technique is a way of unsheltering.

The difference may be the current possibility of a submission (always attempted) of the immediate experience, of the contact with the materiality of objects, to an entirely artificial construct. The binary encoding, exacerbated objectivity of scientific procedure, freed itself from its origin in experimental sciences and now begins to self-manage. The digital, like in a very apocalyptic science fiction movie, becomes the principle, method and goal of every form of human knowledge. There is no greater reason for new technologies than the new technologies themselves. The domain of the natural world has been replaced by its replication. It just was not notified yet.

## References

BAUDRILLARD, Jean. **Simulacros e simulações**. Lisboa: Relógio d'Água, 1991.

BOLTER, Jay David; GRUSIN, Richard. **Remediation:** understanding new media. Massachussets: The MIT Press, 2000.

DESCARTES, René. **Meditações**. São Paulo: Nova Cultural, 1988. (Coleção Os Pensadores, v.2)

GALIMBERTI, Umberto. **Psique e techne:** o homem na idade da técnica. São Paulo: Paulus, 2006.

GITELMAN, Lisa. **Scripts, grooves, and writing machines:** representing technology in the Edison Era. Stanford: Stanford University Press, 1999.

HAYLES, N. Katherine. **How we became posthuman:** virtual bodies in cybernetics, literature, and informatics. Chicago: The University of Chicago Press, 1999.

HEIDEGGER, Martin. A questão da técnica. **Scientiae Studia**, São Paulo, v. 5, n. 3, p. 375-398, 2007,.

Disponível em: <http://www.scientiaestudia.org.br/revista/PDF/05_03_05.pdf>

IHDE, Don. **Listening and voice:** phenomenologies of sound. New York: SUNY Press, 2007.

KAPP, Ernst. **Principes d'une philosophie de la technique.** Paris: J. Vrin, 2007.

KITTLER, Friedrich A. **Gramophone, film, typewriter.** Stanford: Stanford University Press, 1999.

MARTINS, Hermínio. **Hegel, Texas e outros ensaios de teoria social.** Lisboa: Século XXI, 1996.

_____. The metaphysics of information: the power and the glory of machinehood. **Res-Publica:** Revista Lusófona de ciência política e relações internacionais, Lisboa, n. I, 165-192, 2005. Disponível em: <http://www.herminiomartins.com/the_metaphysics-1.pdf>

OLDEST recorded voices sing again. **BBC News**. 2008. Disponível em: < http://news.bbc.co.uk/go/pr/fr/-/2/hi/technology/7318180.stm>

ROSEN, Jody. Researchers find song recorded before Edison's phonograph. The New York Times, 27 Mar. 2008. Disponível em: < http://www.nytimes.com/2008/03/27/health/27iht-27soun.11462356.html?_r=1>

SIBILIA, Paula. **O homem pós-orgânico:** corpo, subjetividade e tecnologias digitais. Rio de Janeiro: Relume Dumará, 2002.

STERNE, Jonathan. O mp3 como um artefato cultural. In: SÁ, Simone Pereira de (Org.). **Rumos da cultura da música:** negócios, estéticas, linguagens e audibilidades. Porto Alegre: Sulina, 2010.

_____. The death and life of digital audio. **Interdisciplinary Science Reviews,** v. 31, n. 4, p. 338-348, 2006. Disponível em: <http://sterneworks.org/deathandlife.pdf>

TAYLOR, Charles. **As fontes do self:** a construção da identidade moderna. São Paulo: Edições Loyola, 1997.

THOMAS, Keith. **O homem e o mundo natural:** mudanças de atitude em relação às plantas e aos animais (1500-1800). São Paulo: Companhia das Letras, 1988.

YOCHIM, Emily Chivers; BIDDINGER, Megan. It kind of gives you that vintage feel: vinyl records and the trope of death. **Media, Culture & Society,** Los Angeles, v. 30, n. 2, p. 183-195, 2008. Disponível em: <http://mcs.sagepub.com>

## Fausto binário: o natural e o artificial em sons analógicos e digitais

**Resumo**

Este trabalho pretende discutir as relações complexas entre a atual cultura digital e o pensamento tecnocientífico contemporâneo, pautado pelo modelo das Tecnologias da Informação (TI). Descrevemos como esse tipo de pensamento foi estruturado à medida que surge um *self* moderno, internalizado e com uma visão do mundo como construção intelectual. Usamos os universos e discursos sobre os sons digitais e analógicos como exemplo dos ideários fáustico e prometeico das tecnologias, conceitos propostos pelo sociólogo Hermínio Martins.

**Palavras-chave**

Cultura digital. Som digital. Tecnologias da informação. Gnosticismo tecnológico. *Self* moderno.

## Fausto binario: lo natural y lo artificial en sonidos analógicos y digitales

**Resumen**

Este estudio pretende analizar las complejas relaciones entre la actual cultura digital y el pensamiento tecnocientífico contemporáneo, guiado por el modelo de las Tecnologías de la Información (TI). Describimos cómo este tipo de pensamiento se ha estructurado en la medida en que surge un *self* moderno, interiorizado y con una visión del mundo como un constructo intelectual. Utilizamos los universos y discursos sobre los sonidos digitales y analógicos como ejemplo de ideales fausticos y prometeicos de las tecnologías, conceptos propuestos por el sociólogo Herminio Martins.

**Palabras clave**

Cultura digital. Sonidos digital. Tecnologías de la información. Gnosticismo tecnológico. *Self* moderno.

# Expediente

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