

The medium is the mediation: postphenomenological views on datacratic contexts

O meio é a mediação: uma visão pós-fenomenológica da mediação datacrática

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ABSTRACT

As technological innovations transform communication processes, Jesus Martín-Barbero's theory of mediations continues to play a fundamental role in the epistemological debates about the environment of communications in interactive networks. Social media, which, according to a postphenomenological approach, have intentionality and moral agency, have become the preferential mediations of contemporary communications, turning collective environments into *datacracies*, regimes in which databases and algorithms have a great influence on decision making. The theory of mediations, by evidencing the importance of the communicative nature of culture, is essential to identify the influence of communication in contemporary ideological formation.

Keywords: Postphenomenology, technologic studies, digital culture, communication epistemology, datacracy

RESUMO

À medida que inovações tecnológicas transformam os processos da comunicação, a teoria das mediações de Jesus Martín-Barbero continua a ter importância nos debates epistemológicos a respeito do ambiente da comunicação em redes interativas. Mídias sociais, que, de acordo com a abordagem pós-fenomenológica, são dotadas de intencionalidade e agência moral, tornam-se as mediações preferenciais da comunicação contemporânea, transformando ambientes coletivos em *datacracias*, regimes em que bases de dados e algoritmos têm grande influência sobre a tomada de decisão. A teoria das mediações, ao evidenciar a importância da natureza comunicativa da cultura, mostra-se essencial na identificação da influência da comunicação na formação ideológica contemporânea.

Palavras-chave: Pós-fenomenologia, estudos tecnológicos, cultura digital, epistemologia da comunicação, datacracia

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THE CONTEMPORARY RELEVANCE OF JESUS MARTÍN-BARBERO

THIRTY YEARS AFTER the historic publication of *Dos meios às mediações* (Martín-Barbero, 1997), the theory of Jesús Martín-Barbero remains extremely relevant, even considering that the mass media have lost to digital media a significant part¹ of the protagonism they had at the time. The new ecosystem of communication, although unprecedented, does not invalidate the theory. On the contrary, it tends to reinforce it.

The connected environment, which emerged as a complement to the real, quickly became the main component of communication. By penetrating into corporeal, social, and perceptual relations with the environment, technology “withdrew” as Heidegger (1977: 26) defines, becoming almost transparent, leaving the object configuration to become a means of experience.

And what an experience. The changes that occurred due to the influence of digital communication in homes, companies, schools, and work environments and social interaction were so great that, in less than twenty years, it had undergone complete transformations: an essentially technical and academic network accessed by telephone line, composed almost exclusively of pages of text, the World wide web initially becomes a libertarian structure, still amateur, of free communication. The popularization of broadband access and, later, of the connectivity via smartphones, creates a condition of permanent connection, which initially would tend to reinforce the ideals of global village and media democratization, since it contributed to the reduction of the number of centralizers and intermediaries to distribute content, while at the same time it contributed significantly to reduce production and dissemination costs.

The market and business opportunities brought on by the Internet, however, are too great to be overlooked by the great economic agents, which, as of 2005, are hastening to explore the opportunities provided by the increased volume of public connected².

Just over two decades after the popularization of Internet communication, the picture is very different from the one inspired by McLuhan’s aphorisms. The web today looks more like a huge conglomerate of private companies, excessively concentrated³, whose professional and well-finished communication services are offered in such a *free* way as the radio and television programming were. Its dynamic, however, is very different from that of the great media outlets that preceded it, resulting in considerable changes in social dynamics and interactions, as well as in the ideological structures of persuasion.

Despite all the changes, Martín-Barbero’s theoretical formulation continues to provide researchers with a set of concepts to overcome the passive-active receiver dichotomy. In the same way that the first researchers of the reception

¹ Across the world, the audience migrates from TV to the Internet, and carries advertising money along with it. Reports such as ZenithOptimedia detail the migration. Available at: <<https://goo.gl/NvMDVJ>>. Access on: 27 Aug. 2017.

² Available at: <<https://goo.gl/jHB8cs>>. Access on: 27 Aug. 2017.

³ According to the ranking *Alexa*, which rates websites by number of visitors, among the 100 most accessed electronic addresses in the world, only Wikipedia is not a for-profit corporation. In Brazil, Caixa Econômica Federal and the Ministry of Finance accompany Wikipedia in Portuguese among the 100 most popular websites, probably because of the online consultation to Bolsa Família and the Income Tax statement, respectively. Available at: <<https://goo.gl/67xo2t>> for the global ranking and at <<https://goo.gl/ET16vB>> for the Brazilian one. Access on: 27 Aug. 2017.

studies ignored the socio-cultural aspects and characteristics of the receiver and pointed the media as central protagonists of the communicational process (Canclini, 2003), much of what is studied in the digital field still brings a vision of the internet as a free and public network, ignoring the interference of algorithms of selection and distribution of information in the process; or it worries too much about the equipment type or the connection speed used rather than focusing on communication and marketing structures often used as manipulation and persuasion techniques.

Martín-Barbero defends the approach of communication through *mediation*, denying the concept of *vertical* communication, through which the receiver is passively manipulated by the emitter:

As strategies of interaction, that is, “modes in which they become recognizable and organize communicative competence, emitters, and receivers,” genres cannot be studied without a redefinition of one’s own conception of communication. For its operation puts us before the fact that textual competence, narrative, is not only present, is not only a condition of the emission but also of the receiving⁴. (Martín-Barbero, 1997: 302)

In the social media environment, this view is even more important. Organizers of the perception, both in the individual existence plane and in the collective life sphere, socialization services as YouTube, Facebook, Twitter, Instagram, and similar ones are far more persuasive than they seem in their user-friendly interfaces and multicolored applications. In the digital context, they are responsible for new cultural mediations, shifting much of the personal interactions previously held in the public space into an intangible environment.

Digital is the new place where culture comes to fruition, expanding the interpretive possibilities with which the receiver deals when appropriating media discourses. This influence has important economic and political components. The protagonism of the communicative does not minimize the economic determinants. On the contrary, it highlights them.

A key feature in Martín-Barbero’s thinking, the centrality of the human being in communication studies, is essential to understand the new digital social environment that, mediated by databases and algorithms dedicated to content distribution, is mixed with the universe of culture and of politics. Such a position helps to define the object of communication, differentiating it from the study of social relations and changes – the domain of the social sciences – at the same time as differentiating it from the positivist, *solutionist*⁵, and reductionist speech of large corporations in the digital market, which insist on describing

⁴In the original: “Enquanto estratégias de interação, isto é, ‘modos em que se fazem reconhecíveis e organizam a competência comunicativa, os emissores e os destinatários’, os gêneros não podem ser estudados sem uma redefinição da própria concepção que se teve de comunicação. Pois seu funcionamento nos coloca diante do fato de que a competência textual, narrativa, não se acha apenas presente, não é unicamente condição da emissão, mas também da recepção”.

⁵Evgeny Morozov (2013: 6) calls *solutionism* the “unhealthy preoccupation with sexy, monumental, and narrow-minded solutions [...] to problems that are extremely complex, fluid, and contentious. These are the kinds of problems that, on careful examination, do not have to be defined in the singular and all-encompassing ways that ‘solutionists’ have defined them; what’s contentious, then, is not their proposed solution but their very definition of the problem itself”.

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the internet as a utopian, unrelated place, not governed by socioeconomic rules, and therefore immune to the responsibilities determined by them.

From this point of view, it is essential to understand technologies as *cultural instruments*, endowed with intentionality, responsibility and moral agency. It is no longer possible to be restricted to the dualistic paradigm that places human beings and technological artifacts in separate realms, being these free and endowed with intentions, relegating those the condition of mere instruments. The theory of mediation enables us to investigate how intentionality, freedom, and agency are in fact the result of sophisticated connections and interactions between humans with and through their technological artifacts.

Currently, much of the social interaction takes place through information and communication technologies (PCs, laptops, consoles, tablets, smartphones, etc.) and digital relationship services called social networks (YouTube, Facebook, Tinder, Instagram, WhatsApp, etc.)⁶. These services are not simply *intermediates* – such as telephone, mail, and telegraph – or *media and mass information outlets*, such as the newspaper, radio, and television. By creating customized and selected communication environments, they play a much more important and active role than the technologies that preceded them. It is therefore important to refute the idea that technologies are neutral tools. It is necessary to seek a redefinition of its moral agency and role in daily life.

Contemporary society leaves a system in which the shape followed the function and that objects could be decomposed into their mechanical components into a virtualized environment in which shape gives no indication of the functions performed within it. For example, it is not possible to easily identify the electronic components of a video game console or smartphone by disassembling them and looking at their parts. Today each function of each connected machine is the microscopic manifestation of ideas embedded in the production processes and algorithms residing in its microprocessors that, combined with each other and to large structures of online data processing, generate complex and hard to access processes. Martín-Barbero already advanced the question: “Technologies are not mere transparent tools; they do not allow themselves to be used in any way: they are ultimately the materialization of the rationality of a certain culture and of a ‘global model of organization of power’”⁷ (Martín-Barbero, 1997: 256)⁸.

It is important to emphasize that the author is not opposed to technology, but, according to him, to “logo-tecnia, which, according to him, generates” one of the most powerful and profound impulses to homogenize life” (Ibid.: 256). For Martín-Barbero, the apparent simultaneity between technological production and its consumption conceals a great discrepancy “between objects and

⁶ A research of GlobalWebIndex consultancy, a company that compiles metrics on digital business, shows that the time that Brazilians spend connected to the Internet via smartphones has tripled between 2012 and 2015. According to the study, Brazilians spend about three hours and 40 minutes online on cell phones every day. In 2012, that number was only one hour and 18 minutes. Brazil ranks third in the ranking of countries with the longest time online using mobile devices, only behind Thailand (almost four hours) and Saudi Arabia (three hours and 48 minutes).

⁷ In the original: “As tecnologias não são meras ferramentas transparentes; elas não se deixam usar de qualquer modo: são em última análise a materialização da racionalidade de uma certa cultura e de um ‘modelo global de organização do poder.’”

⁸ See also Ragon (1974: 114).

practices, between technologies and uses, preventing us from understanding the meanings that their appropriation acquires historically” (Ibid.: 256).

NEW MEDIATIONS IN THE DIGITAL CONTEXT

Throughout the twentieth century, science fiction literature has updated the image of the medieval fiefdom to a kind of modernist city, isolated from the external environment by a kind of protective *dome*⁹. Such coverage, like the medieval walls and moats, would have the function of protecting its inhabitants from the threats of the outside world, while providing the comfort and infrastructure needed to sustain a community.

Such domes are no longer fiction: they already exist, invisible, provided by the wireless connection and network services, ubiquitous in much of contemporary urban activity. Its structure, clearly paternalistic, vetoes or promotes contents according to its private criteria¹⁰ – not always clear – of publication, it does not matter the age or interest of its users. Interestingly, the same networks that limit access to certain content do not demonstrate modesty by stimulating hate speech or allowing antisocial attitudes, such as prejudice, under the unconvincing excuse that “the Internet is free, it is not possible to administer content generated by the user”¹¹. Now, how is it possible to block certain content and not others?

It is interesting to consider that what differentiates the conceptions of *protection* and *incarceration* is not usually much beyond the perceived magnitude of the threat. In totalitarian regimes, it is not uncommon the paternalistic view of the ruler to protect his subjects – often by default – from outside agents. Such paternalism usually does not consider that the contact with the external world has its beneficial component since it leads to the critical analysis and it searches for improvement, maturing users to the social conviviality instead of weakening them in dependence on their artificial isolation which, if it breaks, can cause considerable problems.

It is important to recognize and critically analyze the symbiosis between human beings and their electronic devices before the influence of the technological speech becomes so powerful and comprehensive that it is difficult to resist it or even to identify it.

The influence of computational processes on human action has been growing steadily since the popularization of personal computers. Initially, the machine played the role of an *assistant*, with whom the time of work or entertainment was shared. One worked *with* the computer, which was left in the office at the end of the day. The emergence and growing popularization of wirelessly connected devices – such as laptops, smartphones, and tablets – intensified the

⁹The classic of Isaac Asimov *The caves of steel* (1954) is a reference in the genre of cities in protective domes, located on planets close to Earth. Another classic, this contemporary, *Neuromancer* (1984) by William Gibson, responsible for the popularization of terms such as *hyperspace* and *matrix*, happens in an urban megalopolis in the United States, protected by the dome of a degraded environment. Stephen King, in his *Under the dome* (2009) criticizes this isolation by reversing the argument: the inhabitants of a quiet city one day find themselves isolated from the world by an insurmountable barrier that fell from the sky and isolated its inhabitants from the rest of the world.

¹⁰ According to Facebook *community standards*, you cannot show female nipples, even in specific cases, such as breastfeeding. Available at: <<https://goo.gl/zURkSi>>. There are no restrictions, however, for hate speech of terrorist organizations such as the Islamic State, as it can be seen in several pages of its clearly identified members. Available at: <<https://goo.gl/GchnHW>>. Access on: 27 Aug. 2017.

¹¹ The article of *Independent London* reports the controversy YouTube saw itself in March 2017 for having shown recruiting ads for the Islamic state on pages of major advertisers such as McDonald's, L'Oréal, Audi, government services and media companies such as BBC and the newspaper *The Guardian*. After claiming that it was “impossible” to prevent such ads, Google went back and cut all ads for videos with less than 10,000 views. Available at: <<https://goo.gl/Vy28Bu>>. Access on: 27 Aug. 2017.

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relationship: while PCs were shared equipment, smartphones and tablets are personal equipment, which often accompany users in their pockets and purses. Leaving it at home, even for a short journey, usually causes a reasonable amount of discomfort. Today one *lives at the computer* that, as a kind of electronic prosthesis, is rarely abandoned.

Soon, the automation of industrial equipment and urban processing (a process called by the market as *smart cities*), will increase codependency between people and machines. In such a connected urban environment, each individual will live as if they were *inside* of the machine, as they will be surrounded by devices of several types and sizes, all exchanging information about them. Understanding the influence of such devices on a daily basis is therefore essential.

Martín-Barbero, in an interview with *Pesquisa Fapesp Magazine* (2009), realizes the importance of the Internet in what he calls “the mixed communication types”:

García Márquez, when he won the Nobel Prize, started his speech by asking if people who had suffered 100 years of solitude would have a second chance on earth. I now answer that yes. Because that culture that was despised by the intellectuals of literate culture, which is the visual, oral, sound and gestural culture, now they enter as a culture through the internet and come together in hypertext. As Manuel Castells put it, the computer has ended the separation of the two sides of the brain: the side of reason, of argument, and the side of passion, of imagination, that are now together. Imagination is no longer a power of poets and artists. So, I look at the new technologies while allowing an appropriation that, in turn, allows the hybridization, the mixture of everyday cultures of the majority with what was the culture of the small elite that had the writing¹². (Martín-Barbero, 2009: 15)

Martín-Barbero’s proposals draw attention to the creative possibilities created by the popularization of the means of capturing, producing and editing sounds, images, and texts. If it is true that such popularization would already be a sufficient reason to provoke a great growth in access to the structures and means of production, what makes them truly transforming – and unlike the mass media that preceded it – is their *malleability*, or the ability that any consumer of communicative content has to store, transform, and share them again. How Umberto Eco defines it in *Obra aberta* (1979), the receiver becomes the subject of the action, or “user”:

A work of art is an object produced by an author who organizes a section of communicative effects so that each possible user can understand again [...] the

¹²In the original: “García Márquez, quando ganhou o Prêmio Nobel, em seu discurso começou perguntando se os povos que tinham sofrido 100 anos de solidão teriam uma segunda oportunidade sobre a terra. Eu, agora, respondo que sim. Porque aquela cultura que foi desprezada pelos intelectuais da cultura letrada, que é a cultura visual, oral, sonora e gestual, agora elas entram como cultura pela internet e se juntam no hipertexto. Como disse Manuel Castells, o computador acabou com a separação dos dois lados do cérebro: o lado da razão, da argumentação, e o lado da paixão, da imaginação, que agora estão juntos. A imaginação não é mais um poder dos poetas e dos artistas. Então, visto às novas tecnologias enquanto permitem uma apropriação que, por sua vez, permitem a hibridação, a mestiçagem das culturas cotidianas da maioria com o que era a cultura da pequena elite que tinha a escritura”.

mentioned work, the original form imagined by the author. In this sense, the author produces a finished form in itself, wishing that the form in question be understood and enjoyed as he has produced it; However, in the act of reacting to the web of stimuli and understanding their relations, each user brings a concrete existential situation, a particularly conditioned sensitivity, a certain culture, tastes, trends, personal prejudices, so that the understanding of the original form is verified according to a particular individual perspective. In fact, form becomes aesthetically valid insofar as it can be seen and understood in multiple perspectives, manifesting richness of aspects and resonances, without ever ceasing to be itself. (Ibid.: 53)

In 1936, Walter Benjamin (2008: 23) wrote his essay warning about the risk of technological reproduction creating an impatience that would end up destroying the “aura” of Art and eliminating the humility necessary to understand it. He would scarcely imagine that the deference once reserved for works was transferred, in the digital environment, to the equivalent of their frames.

By worshipping the impact power of presence on social networks – *number of followers, number of downloads, number of “likes” and “shares” etc.* – and technological devices – *version, capacity and speed of the computer, smartphone or tablet etc.* – instead of the quality of the content they have, the transcendental condition is redirected to the mechanism. The new ritual, a kind of fetish, has in itself nothing of art or reflection. Its use does not encourage knowledge or stimulate discovery. On the contrary, it fixes people to objects and conditions them to the mode of competition and rewards embedded in them.

Human beings and technological artifacts live today in such an integrated way that it becomes increasingly difficult to lead a productive life without the support, even partial, of these digital mechanisms of social intermediation. It is, therefore, necessary to examine them.

THE NATURE OF TECHNOLOGICAL MEDIATION

The *actor-network theory*, by Bruno Latour (2005: 121), is indifferent to the nature of the components of a network, which can be both human and non-human since each component takes its form due to the relations that they establish. She argues that nothing is outside the network of relationships, that there is no difference in the ability of technology, or even differences between humans, animals, or objects in acting and developing bonds. Thus, he assumes that the differences between each protagonist are generated in the network of relations, and they should not be presupposed. This way of analyzing them, despite pertinent, is incomplete.

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Lucas D. Introna (2015: 50) argues that Latour's analysis is on the *pragmatic* of the postphenomenological structure. On the other hand, the *hermeneutical* approach, a different mediation type would occur. The *action* of the objects would be in the format of the human *perception*, defining the reality for consequent interpretation, while being part of it. Non-human actors, according to this perspective, become interpreters of reality, responsible for the relationship between the stimuli and their perception.

The use of technological tools as mediators between people and the environment surrounding them usually causes a significant transformation in their way of thinking. Lewis Mumford (2010: 13) describes how the mechanical clock when popularized in the fourteenth century, "it dissociated time from human events and helped create the belief in an independent world of mathematically measurable sequences". According to him, the abstract picture of divided time has become a point of reference for both action and thought.

The influence of technology on society is such that it is not uncommon to identify it as a threat. From Icarus to Faustus, from *Golem* to Frankenstein, the fear of autonomous technology, over which there is little or no control, is recurrent. It only begins to be seen in a positive way, albeit timidly, with the idea of *disenchantment of the world*, proposed by Friedrich Schiller and developed by Max Weber (1971: 270). According to this line of thought, as the powers of technology advance, those of nature recede. Mysticism tends to be devalued and society – especially the Western one – becomes bureaucratic and secularized. Following the same line of thought, Jürgen Habermas (1968) argues that technology is a result of the success of Enlightenment values, describing the disenchantment of the world as the liberation of humanity from superstition and ignorance, from fascination with nature and from its arbitrary power: "the experience of reflection induced by enlightenment is precisely the act through which the subject frees itself from a state in which it had become an object for itself" (Ibid.: 247).

As a result of the social transformations promoted by the second industrial revolution, the ontological presence of technology is a recurring theme in philosophy at the beginning of the 20th century. Martin Heidegger publishes *Sein und Zeit* in 1926; John Dewey, *The quest for certainty* in 1929; Karl Jaspers, *Die geistige situation der Zeit* in 1931; Lewis Mumford, *Technics and civilization* in 1934; and José Ortega y Gasset, *Meditación de la technica* in 1939.

World War II, however, brought back the primitive fear of technological artifacts beyond the control of their creators. Impressed by the effects of the atomic bomb, Karl Jaspers, in *The atom bomb and the future of man* (1961), warns about the technological capacity to put human existence at risk. To overcome

its *demonism*, it would be necessary to perceive it, in the last analysis, as a collection of means, neutral in themselves, used for purposes determined by us. According to Jaspers, humanity would need to wonder about what it intends to do with technology in order to define its future.

Jaspers' statement is important to consider that the influence of technological artifacts on human behavior cannot be simplified and summarized by restricting them to passive instruments to be used freely to satisfy morally good or evil purposes. Technological objects are the materialization of intentions, and, as such, play a very active role in the definition of the human condition. They actively influence the actions of their users, changing the way they perceive the world, as well as interacting with each other in building contexts.

Nor would technological mediation imply, contrary to what can be imagined, a limitation of human freedoms. Not even for the simple fact that absolute freedom is not possible: actions take place in the real world, which constrains and limits actions (it is not possible to fly, become transparent or go back in time, for example). The only way to get rid of them would be to ignore reality, which would tautologically prevent any action: "the central idea in the approach of moral mediation is not to attribute freedom to things, but to include the mediating role of things in our notion of freedom" (Verbeek, 2014: 84).

Objects have no intentions, and in this condition, they cannot be held responsible for the human actions intermediated by them. Its responsibility, when it may be attributed, is *causal*, no *moral*. As Verbeek argues, this analysis should not be understood as a defense of animism, but as a "critique of humanism":

Instead of claiming that material objects are "spirited", scholars who defend the idea that technologies are morally significant move away from ethical approaches that isolate and immunize human existence from its material conditions and contexts. [...] hybrid approach to the relations between humans and things does not reduce human morality, but adds to it; it shows dimensions that normally remain underexposed. Conceptualizing the moral significance of things does not undermine human responsibility by blaming cars for accidents, but rather expands the ways in which we can design, implement, and use technologies in responsible ways. (Ibid.: 80)

If the effect of the action of each object depends on the context in which it is used (knives can be used as screwdrivers or spatulas, etc.), technologies need to be understood *phenomenologically*, that is, in relation to the different forms and experiences of use to which they are subject. In this way, information and communication technologies can also be interpreted as technological forms of

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mediation, by registering and enabling interactions between people through algorithms and databases, being, in this condition, much more complex than mere objects.

At some point in the second half of the twentieth-century man begins to give up being the master of the machine to live in symbiosis with electronic systems. The productive efficiency of the new mechanisms is so great that it is not surprising to delegate to it all decisions, including those for which it is not capable, such as the definition of preferences and social interactions. Bureaucratic processes, standardized in *algorithms*, change the ways of administering, controlling, training and remunerating man, and in many situations, they create the risk of dehumanizing human agents, taking from them which is most precious to them: their capacity to think and improvise.

Contemporary society depends on computational systems for a growing share of the raw material used for cultural life, from the search for content to ways of sharing it. The more one interacts with these systems, the more one proceeds on a codependency trajectory, creating a kind of hybrid identity, which the individual defines through digital practice because virtual spaces become more real in terms of experience than the material environments they came to represent.

The ideological speech in defense of algorithmic social processes is so common that it is not uncommon to hear it even in critical analysts, such as Lev Manovich (2013), who defends software as a universal language, “interface to our imagination and the world”. Simplifications such as this, which claims to be the primary component algorithms of society, can lead to significant distortions, such as the fact that there are more cell phones in the world than toilets¹³. Ian Bogost (2015) calls this thinking “algorithmic culture”, which

so much as a devotional one, a supplication made to the computers [...]. This attitude blinds us in two ways. First, it allows us to chalk up any kind of computational social change as pre-determined and inevitable. It gives us an excuse not to intervene in the social shifts wrought by big corporations like Google or Facebook or their kindred, to see their outcomes as beyond our influence. Second, it makes us forget that particular computational systems are abstractions, caricatures of the world, one perspective among many. The first error turns computers into gods, the second treats their outputs as scripture. [...] algorithmic culture [...] just euphemizes a corporate, computational theocracy.

Strategists of political and religious leaders have always known that there is no more effective tool for manipulation than the illusion of omniscience and omnipotence, properties normally attributed to external deities such as god or

¹³The UN report highlights the global health crisis, with more than 2.5 million people without basic sanitation, seeking to warn of the situation where “more people around the world have cell phones than toilets”. Available at: <<https://goo.gl/p5ZKY9>>. Access on: 27 Aug. 2017.

machine – which at the present represents the role of a *deus ex machina*. Free from moral and ethical constraints, external entities become masters of their own destiny, superior to the human anthill, ideal to control it. Freedom is ultimately incompatible with omniscience.

But one cannot ignore that the very question of the *perfection* of electronic systems is also a myth. Even today, behind recommendations and *magical* discoveries made by the applications located in bags and pockets, there is still a lot of human work. There would not be as many engineers and mathematicians working in social network offices such as YouTube and Facebook, not so many employees carrying boxes in the warehouses where the e-commerce giant Amazon's stocks are located, or so many manual workers in the factories manufacturing Apple's computers and smartphones if the machine could do all the work alone.

The ideal of technological efficiency, which emerges as an idea that is on the verge of eccentricity, over time it blends in with the society that harbors it. It attaches positivistic values of efficiency to the ideals of good life until they appear to be essential, an almost invisible foundation that structures and shapes the worldview, channeling potentialities and setting limits to its subjects who, hypnotized, do not question it. In Martín-Barbero's words:

In the name of electronic memory, our people are being pressured to renounce having and developing their own memory since, in the alternative between backwardness and modernity, cultural memory does not count, it is not informatically operative and therefore not usable¹⁴. (Martín-Barbero, 1997: 254)

Computer code allows new communicative processes, and by increasing the social dimension of networked media, it provides new possibilities for collaborative thinking. It has never been more important to think critically about how knowledge in the 21st century is encoded in the media, in products, and software services. But one must develop a *humanist* understanding of technology, an investigation of what is human in the relations with the machine. Again Martín-Barbero brings a precise reflection:

Instead of a political decision, among different possible social objectives, it would be the case to seek a techno-scientific solution about the correct ways to obtain a previously fixed purpose. For this, it would be possible to dispense with the public debate; a technical fact or a "scientific truth" cannot be put to vote. The citizen ends up being replaced by the specialist¹⁵. (Ibid.: 282)

¹⁴In the original: "Em nome da memória eletrônica nossos povos estão sendo pressionados a renunciar a ter e desenvolver sua própria memória, já que na alternativa entre atraso e modernidade a memória cultural não conta, não é informaticamente operativa, não sendo, portanto, aproveitável".

¹⁵In the original: "Em vez de uma decisão política, dentre diferentes objetivos sociais possíveis, seria o caso de buscar-se uma solução tecnocientífica acerca das maneiras corretas para obter-se uma finalidade pré-fixada. Para tal, seria possível prescindir do debate público; não cabe submeter à votação um fato técnico ou uma "verdade científica". O cidadão acaba sendo substituído pelo especialista".

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It should be noted, however, that a “techno-scientific solution” is still a political decision. The resolution to listen to what the technique has to say and to give to the question is political, based on its values of efficiency and effectiveness, a greater burden than what would be given to an alternative that considered the human. Again, the postphenomenological approach is precise, since the decision to choose the human is a *technical* decision, whose only difference lies in valuing human components more than financial or material ones.

The reflection of the previous paragraphs seeks to contribute to the understanding of part of the technocratic engineering decisions taken by the military governments that occupied Latin America in the second half of the 20th century. It is also surprisingly present when one notices, in the speech of candidates for command posts of the executive branch around the world, the popularity of programs whose central point is the mistaken assertion that they are not of a political order, which is an implicit paradox.

ANTI-SOCIAL NETWORKS

By simultaneously operating as a mirror and window to the world, computational structures of social interaction shape the way in which its users relate to the world. In the long run, they tend to transform societies and individuals. “The effects of technology do not occur at the level of opinions or concepts,” wrote McLuhan, “alter sense ratios or patterns of perception steadily and without any resistance” (1994: 31).

Unlike mass media, electronic social networks not only speak for many, they also collect a great deal of information about their interlocutors, analyzing in detail what moves them. Each small interaction is recorded, sorted, and analyzed to generate a custom content distribution that can reach and move each user with great precision. The richness of these databases, combined with the sophistication of their content selection algorithms today, is used to define, in a paternalistic way, what should (and should not) be read by each one. By making the common points upon which a sensible discussion would be based are minimized to the point of disappearance, such algorithmic selection creates a natural isolation. By showing to each user only what is *relevant* for itself, this structure removes from everyday life alternative visions that could broaden points of view and promote social maturity.

As a spoiled child living in a controlled environment, or as the subject of a totalitarian regime, the user of digital social networks is infantilized, when losing a significant part of social perspective and ignoring the existence of facts and opinions contrary to their expectations.

It is not by chance that AOL, one of the first companies to offer the community service and curation of digital content, presented its environment as a “walled garden” to protect its users from the dangerous external world¹⁶. Such paternalistic terminology remains to this day. The terms *deep web* and *darknet*¹⁷, for example, used to refer to the anonymous internet – that which cannot be accessed via Google – correspond to the image that is made of these environments, seen as dangerous and infectious places, domain of traffickers and criminals, when they are nothing more than a set of private networks and sensitive environments used to exchange messages and documents, much of it restricted to strangers, much like the beginning of the Internet everyone knows. Anonymity, of course, makes it easier to conduct criminal transactions. But it is hardly absolute. And nothing prevents absolutely legal and ordinary operations from being carried out there.

The isolation of the user from social networks in protected environments – a problem that Eli Pariser (2011) calls “filter bubble” – results in a set of personalized suggestions, based on the user’s location, history, and preferences. The result of this widespread practice can be harmful, especially if one considers that many users are unaware of its existence and scope.

Over time, each individual who concentrates his network of relationships and searches for information in the enclosed courtyards of the large companies that make up what he believes to be the internet ends up suffering an involuntary form of alienation, promoted by bases and data and algorithmic processes that, in the name of *relevance* and *efficiency* – positivist values – in the presentation of results, separate who reads a news (as in the Facebook and Twitter timelines), search for information (on Google or YouTube), search for a book (Amazon) or application (Google and Apple) of results that they may not agree with or find offensive in order to isolate them in their own cultural, political or ideological biases and beliefs. The sophistication and transparency of the algorithm give the illusion that the individual is correct in their worldview, and that their point of view is supported by the community. Under these conditions, it is only natural that you see any opposition as a barbaric attack.

One lives in a group isolation, in which the parable of Schopenhauer’s porcupine (apud Luepnitz, 2003: 117) is quite adequate, since the need for social aggregation unites the members of the network, only so that they are mutually repelled by the various prickly and unpleasant features of their nature. The moderate distance that the codes of education and good manners established in a physical society, however, disappear in the digital environment, in which one can abandon connections and seek others according to their convenience or mood¹⁸. Everything is increasingly lonely. And prickly.

¹⁶ According to TechTarget *Network*, a “walled garden” is an environment that controls their users’ access to content and web services. The environment directs user navigation to certain areas, to facilitate access to certain contents or to restrict access to others. Available at: <<https://goo.gl/Y3F7aD>>. Access on: 28 Aug. 2017.

¹⁷ According to the *Wikipedia*, “Deep Web (also called invisible web or hidden web) refers to content on the World Wide Web that is not indexed by default search engines”. The same entry goes on to say that “It should not be confused with Dark Internet, which is related to the portion of the Internet that cannot be accessed or that was made inaccessible by conventional means. It is also not confused with Darknet, which is not just a simple file-sharing network, but an underlying or layered network, where there is a lot of effort to keep users’ data anonymous”. Available at: <<https://goo.gl/TsvWg>>. Access on: 28 Aug. 2017.

¹⁸ The political situation in Brazil during the Impeachment process of the then president Dilma Rousseff led to several family fights, partly incensed by social media. Reportage in *Folha de S.Paulo*, available at: <<https://goo.gl/QNWbmy>>, and in *O Globo*, available at: <<https://goo.gl/5XyaQv>>. Access on 28 Aug. 2017.

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As the *convenience* of socialization services is mixed with its ubiquity and intensity of use, the *communication* of its users with the outside world is sacrificed. Access to multiple points of view is restricted and the perspective of opinions and lifestyles is limited. Individual biases and prejudices tend to be reinforced, relegating those who use social media as a source of information little alternative to immersion in preexisting values and knowledge, reinforcing an egocentric approach of the collectivity.

In socialization environments where content supply is directly linked to user preferences, there is little information or education, since there is rarely a drop in expectations or questioning of beliefs. The *global village* to which McLuhan referred to is closer to *the globe to behave like a village* than as a single, diverse, integrated and multicultural community.

As this type of service is popularized, its providers become big business and need to search for users around the globe to advertise advertising messages¹⁹ and to sustain expansion plans that satisfy the profitability expectations of their shareholders. In order to achieve such objectives, the content available in their networks cannot displease their users. To that end, content formatting techniques according to the interests and biases of each user are reinforced with each new interaction with the network, which turns these environments friendlier internally and averse to the foreign, simultaneously integrated and little diverse, a typical characteristic of closed communities.

By reinforcing in each user the belief in their own ideas, electronic social networks reduce the importance of any comment that opposes pre-established ideas, often seeking to disqualify its author. In this globalized village, barriers between home and street, private and collective, public and private, are dissolved, dissolving with them respect for the space and values of others.

DATA CRACIES

The scenario is complicated when one considers that much of the social models created in modernity seems to require a revision today. In a society of globalization, information, connectivity, and personalization, unifying ideas about interest groups, such as *markets* proposed by Adam Smith or Marxists *classes* seem coarse and impersonal generalizations.

In the search for management models of the new social scenarios, new projects use computational theories and analysis of large volumes of data from digital communities to try to predict interaction dynamics and tendencies between groups of people²⁰. Its purpose is to create mathematical models to detect anomalies in social movements, compare scenarios, and adjust supply variables to meet topical demands.

¹⁹In the same way as with other media offered *freely* to its recipients, in the main services of digital social media advertising is the main income source, able to subsidize the service and generate great profitability. The social metrics analysis service *Hootsuite* compiles some of this income data at <<https://goo.gl/mqHWXR>>. Access on: 28 Aug. 2017.

²⁰It is called *sentiment analysis* (sentiment analysis) the practice of searching for artificial intelligence systems in large databases to identify, extract, quantify and study affective states and other subjective information in population groups. The search for the term in Google Scholar generated more than 45 thousand results, applied to different areas of knowledge. Available at: <<https://goo.gl/qEJ5Uk>>. Access on: 28 Aug. 2017.

The multidisciplinary proposal connects areas of knowledge as diverse as Economics, Sociology, Psychology, Communication, Design, Mathematics and Administration in the search of new administrative processes capable of detecting, in the universe of data collected by so many equipment and services, behavior patterns that are more dynamic than those determined by the *old* collectives of classes, professions, neighborhoods, and parties.

The combination of social infrastructure, telecommunications, political science, and marketing can generate all kinds of effects. The restructuring it promises is much greater than that which occurred in the transition between Feudalism and the Modern Age. Change is, in fact, so great that it is virtually impossible to predict the effects and results of the multiple interactions and mediations it will promote among its actors of varying sizes and powers.

However, the compilation of social information generated by ubiquitous sensors and applications, capable of capturing practically all forms of mediation, voluntary or otherwise, with or without the knowledge of its users, can result in an unprecedented form of control. Through the combination of *what is declared* – captured through interactions via communication equipment and social media services – and *what is done* – detected through the use of equipment, content consumption, financial transactions, localization services and contact networks – it will be easy to know, with a high degree of accuracy, the intentions and ways of thinking of each individual, even if it is by reverse engineering.

With this knowledge, any action of persuasion becomes simple. By selecting information, restricting contacts, coercion techniques or using force, it is possible to change the behavior of part of the population, identify opposition focuses and eliminate them before they present any real threat.

It is not clear what can happen when so much power is delegated to a single operator. How can one be assured of the legitimacy of the goals of an agent with such influence? In the same way that the rulers of authoritarian and paternalistic regimes of fiction work such as *1984* and *Brave New World*, the manager of the processes mediated by this type of algorithm can quickly become very dangerous, paternalistic, even dictatorial, according to the embedded or emerging values of the system.

Such a level of invasion of privacy, of envying espionage services, is not fiction, future trend, or obscure practice of totalitarian regimes or intelligence agencies. It is used openly by modern advertising²¹ and by large information merchants such as social networks, telephone companies, and financial institutions. The trend analyzed by Martín-Barbero becomes more credible and it mixes with the social mediations themselves:

²¹The service package Adobe Analytics Cloud is one of several *market analysis* offered to companies. According to its website, the analysis is capable of promoting “real-time accurate targeting” so that “the transition from insights to action is as fast as possible” and “an objective view of the client’s journey across all devices and channels – paid, earned and own”. Available at: <<https://goo.gl/i1RZ9v>>. Access on: 28 Aug. 2017.

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²²In the original: “A partir dos anos 60, a cultura popular urbana passa a ser tomada por uma indústria cultural cujo raio de influência se torna cada vez mais abrangente, transpondo modelos em larga medida buscados no mercado transnacional. A proposta cultural se torna sedução tecnológica e incitação ao consumo, homogeneização dos estilos de vida desejáveis, banimento do nacionalismo para o “limbo anterior ao desenvolvimento tecnológico” e incorporação dos antigos conteúdos sociais, culturais e religiosos à cultura do espetáculo. Nessa tarefa, a publicidade será essencial: transforma os produtos comerciais em instituições domésticas ao mesmo tempo em que contribui para mitificar um “progresso” tecnológico que nas condições econômicas das classes populares se traduz em desvalorização cotidiana de seus saberes e suas práticas.”

²³In 2013, SAP, a corporate software giant, partnered with the Fraunhofer Institute, the video game company Crytek and the TSG Hoffenheim club, creating a solution based on geospatial processing, sensors and three-dimensional visualization to analyze the results of each athlete in each training, instantly. The uniforms carry sensors, memory for local processing and a small antenna. Thanks to them, more than 60 million records can be captured, transmitted, analyzed and stored per game. History narrated by SAP itself. Available at: <<https://goo.gl/pJZcu3>>. Access on: 28 Aug. 2017.

Starting in the 1960s, urban popular culture started being taken over by a cultural industry whose scope of influence becomes increasingly comprehensive, transposing models that were largely sought after in the transnational market. The cultural proposal becomes technological seduction and incitement to consumption, homogenization of desirable lifestyles, the banishment of nationalism to the “limbo prior to technological development” and incorporation of old social, cultural and religious contents into the culture of the spectacle. In this task, advertising will be essential: it transforms commercial products into domestic institutions while helping to mythologize a technological “progress” that in the economic conditions of the popular classes translates into a daily devaluation of their knowledge and practices²². (Martín-Barbero, 1997: 268)

There is a dilemma: the use of technology improves the quality of current social processes while impoverishing the relationship of users with reality. Immersed in the incessant flow of data and stunned by the intensity and innovation of mediations, the contemporary citizen is perplexed. And that is all. Their community has been disaggregated, their ruler is bound by policies and legal determinations of other times, and the institutions that should protect them are too preoccupied with their own survival in an overly competitive environment to provide any kind of assistance. Stunned, they witness the transformation of traditional civic regimes into *datacracies*, regimes in which decision-making processes are heavily influenced by databases and pattern-seeking algorithms. From soccer drills²³ to administrative processes²⁴, the persuasive influence of such systems is increasing.

It is curious to note that in a time of so much transformation and revision of social models, three ideas of the nineteenth century rise in a digital, connected and personalized way, presented as if they were great innovations, when in fact they are proposals of human psyche reduction to an index. They are: *Darwinism*, applied both to industries and technologies and to the cruel competition of companies for their users in the global market²⁵; *Communism*, with the proposals of free collective access and voluntary work²⁶; and *Taylorism*, with the obsessive metrification and the search for absolute metrics of *efficiency*, both in the personal and professional context²⁷. The appropriation of these ideas is no more than a simplified and scant justification for commercial and industrial practices that should have been extinct for decades.

A pragmatic approach, which considers the history and amount of accumulated personal data more important than the individual's own testimony that originated such data tends to create analysis distortions²⁸, at the risk of removing from the individual what characterizes them as human beings, reducing them

to a mere knot in a giant network whose behavior is predetermined and inevitable. Such a reduction is dangerous and alienating since it overestimates the algorithm as it removes from the citizen the protagonism of its free will in the experience of a digital democracy.

Logical sets of symbols and rules, algorithms have made a great contribution to science because they are much more than a mystical or hermetic code to explain the mechanisms of the universe, but a logical syntax that founded Western thinking and what is now known as technology. But it should not be forgotten that algorithms are also *simplifications* of the reality they propose to measure since they create abstractions to represent the complexity of the world in processes that capture some parts of their logic, discarding the rest. Even considering their complexity, scope, and speed, it is still only a set of instructions.

In their current quasi-mystical incarnation, computer systems gain an idyllic – and ideological – component by being represented by perfect, infallible computing codes capable of analyzing data and identifying patterns in an elegant, precise, almost divine way. It can also be said about the material it works with – the data – now labeled as *Big Data*.

The myth-making of processes over human idiosyncrasies is not new. In 1911, the book *Principles of scientific management*, by Frederick Taylor (2010), already had one of the first explicit and formal outlines about the assumptions of the world thought of reducing the human to mechanical processes. These include the beliefs that the main, if not the only, goal of human work and thinking is efficiency; this value of technology should be applied to all social aspects, with a higher value than human judgment. A few sadly known proposals arise, such as: “human judgment, because it is ambiguous and complex, unreliable”; “subjectivity is an obstacle”; “what cannot be measured does not exist or has no value”; and “social affairs will be best addressed if they are administered by specialists”. The specialization and mechanization of labor replace crafts and eliminate humanity. Neil Postman calls this dictatorship as *technopoly*:

two opposing world-views—the technological and the traditional—coexisted in uneasy tension. The technological was the stronger, of course, but the traditional was there—still functional, still exerting influence, still too much alive to ignore. [...]

With the rise of Technopoly, one of those thought-worlds disappears. Technopoly eliminates alternatives to itself in precisely the way Aldous Huxley outlined in *Brave New World*. It does not make them illegal. It does not make them immoral. It does not even make them unpopular. It makes them invisible and therefore irrelevant. And it does so by redefining what we mean by religion, by art, by family,

²⁴ According to the Microsoft blog, the London Underground is automated by their intelligence services. It is interesting to note that traffic data from one country's largest shopping center (United Kingdom) is analyzed by a company from another country (United States), especially given the recent controversy over the data leakage from these companies to the US intelligence and espionage agencies. Available at: <<https://goo.gl/AXzo4T>>. Access on: 28 Aug. 2017.

²⁵ The *voluntary* participation in pharmaceutical testing is a practice unfortunately used a lot by large pharmaceutical companies in poor countries, in search for cheap solutions to accelerate human testing, transforming populations into guinea pigs. Report of the Center for Research on Multinational Corporations (SOMO), available at: <<https://goo.gl/g4ww13>>. Access on: 28 Aug. 2017.

²⁶ Without the support of the State or institutions that guarantee the subsidy, this practice is just a camouflaged form of piracy, eliminating an important source of income for the artistic class.

²⁷ Abuse of employee demands drives many economically depressed workers into despair. In 2010, the history of 18 suicide attempts – 14, unfortunately, carried out – among workers at *Foxconn*, Apple's subsidiary for manufacturing mobile devices in Shenzhen, China. Article of the English newspaper *The Guardian* explores the subject. Available at: <<https://goo.gl/PTGBzX>>. Access on: 28 Aug. 2017.

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²⁸ A growing number of empirical research have demonstrated that the selection process of large databases still present several gender biases and defects, such as the study by Zhao et al. (2017), evidencing a sexist distortion in the machine learning process of large databases. In the same way, the site *ProPublica* analyzed the criterion of identifying the risk for crime recidivism in one of the main support applications to the US penal system, evidencing severe racist distortions in determining the potential social risk of convicted people. A description of this review is available at: <https://goo.gl/8ksp77>. Access on: 28 Aug. 2017.

²⁹ Kevin Kelly, former editor of the technological culture magazine *Wired* and technology analyst, created the term to refer to what he calls an “emergent system of the technium – what we often mean by ‘Technology’ with a capital T – [which] has its own inherent agenda and urges, as does any large complex system, indeed, as does life itself”. Statement available at: <https://goo.gl/hWv4MG>. Access on: 28 Aug. 2017.

³⁰ Ray Kurtzweil, inventor and computer scientist, proposes *technological singularity*, a hypothesis that the evolution of artificial intelligence would reach a point where it would exceed the combined intelligence of all humans on the planet, resulting in a superorganism with divine powers. The hypothesis is presented at <https://goo.gl/FXzXPn>. Access on: 28 Aug. 2017.

³¹ An article from the magazine *The Atlantic* warns that a possible cause of war in Congo would be the mineral extraction to produce smartphones. Available at: <https://goo.gl/smpMW7>. Access on: 28 Aug. 2017.

by politics, by history, by truth, by privacy, by intelligence, so that our definitions fit its new requirements. Technopoly, in other words, is totalitarian technocracy. (Postman, 1993: 31)

According to Postman, the *information*, the main product of a technopoly, is deified, becoming both the medium and the purpose of human life. Information and communication technologies are developed to solve a problem that did not exist or was not crucial: its scarcity. New forms of mysticism are developed to give it a life of its own (*Technium*²⁹) or transform it into a rapture (*Singularity*³⁰). It does not seem to solve, however, the problems of the world. Wars, malnutrition, and inequality are not solved by adding information, which may even have the opposite effect, stimulating conflicts among miserable populations by winning rare ores to manufacture the new phones³¹, or subjecting workers to subhuman conditions in the work of manufacturing and recycling materials³².

Insensitive to this data inflation and *information obesity*³³, contemporary culture insists that there is still not enough, and it seeks increasingly more³⁴. Postman (1993: 113) argues that with “technopoly”, human progress is replaced by technological progress. The main goal is no longer to reduce suffering but to meet the demands of the compiling and organizing machine of information. Confidence is lost in human judgment and in its interpretation of subjectivities. It devalues the unique ability to see situations through all their emotional, moral or psychological dimensions. Everything is replaced by faith in technique.

In this type of society, whoever controls the data has the real power. In the same way that European catechists did in the indigenous soil, the conquerors of the great digital empires fascinate the natives with their interfaces. As it was done in *Circus Maximus*, the community is distracted by the humiliation of others and futile games, while personal information is collected and marketed unscrupulously. The circus is so efficient that it dismisses bread distribution.

THE POSTPHENOMENOLOGICAL APPROACH

The neutrality of technology is a misconception. Similar deception is its divinization as if all the techniques were different manifestations of a single entity, that would have the same greatness that *nature* or *humanity*. Technology is at most an indication of an artifact category, as diverse, generic, interdependent and multidisciplinary as art. Ambiguous and contradictory in its essence, it is as unpredictable as any other human cultural development. The idea of devices making decisions by people is, in essence, incompatible with human freedom. And it has strong totalitarian outlines.

The postphenomenological view (Verbeek, 2014: 80) argues that when a technology is used, it not only interferes with human actions but also shapes experiences and behaviors. Because of their complexity and influence, they demand, as Philip Brey (2014) suggests, a *structural ethics*, similar and complementary to that dedicated to human agents. Such a division of ethics would deal with *moral* structures and networks, their impact on human beings and the relationship between human and non-human agents. According to Brey (2014: 135):

Structural ethics studies social and material arrangements as well as components of such arrangements, such as artifacts and human agents. [...] In doing so, it also aims to identify, evaluate and prescribe roles of individual elements in these arrangements. Unlike individual ethics, structural ethics hence looks at larger structures and networks with the aim of engaging in social and technological engineering.

Brey argues that moral factors may be directed to *results* or *behaviors* and that those who seek the first type have a strong influence – positive or negative – on the social effects and later moral evaluations caused by them. Result-oriented moral factors tend to be in industrial or commercial equipment that seeks to increase efficiency, but they may in the process cause repetitive strain injuries in their users. And moral factors directed to behaviors have a subtler impact. They can reduce focus, increase insecurity, or impose efficiency ideals on human relationships.

The identification of moral factors proposed by Brey is appropriate in an environment where machines cease to be tools to become social intermediaries. In the near future, cities and governments will be automated to the point of being impossible to perform any bureaucratic function without their intervention. Before this moment arrives, it is important to question what the *moral goal* of technology is. What does it consider a *success*? What is the *burden* of its variables? What *importance* is given to the human component? Are their *processes* open, transparent and editable? How are they *communicated*? In what way their intermediations *interfere* in human decisions? In other words, what does it take as *ethical* principles? Not a few questions and the answers so far are not clear. It is essential, however, to formulate them because we are, like Ionesco's character, surrounded by technological rhinos brutally occupying the daily space, contaminating it with pragmatic views of efficiency, in which little is left of human besides the error.

The social context is progressively composed and amplified by the so-called *smart* objects, dependent on high sophisticated decisions, performed by

³² *National Geographic* reports the dangerous process of *recycling* ships in Bangladesh. Available at: <<https://goo.gl/72R4r7>>. Access on: 28 Aug. 2017.

³³ Clay Johnson proposes an "Information Diet" by finding that excessive consumption of information – which he compares with excessive consumption of food – leads to confusion and stunning. The problem, however, is not with the victim, but with the information provider. Libraries and newsstands never caused this kind of confusion. Available at: <<https://goo.gl/tr59sS>>. Access on: 28 Aug. 2017.

³⁴ Several technical analysts predict that in 2017 more data will be generated and stored than in the entire history. Available at: <<https://goo.gl/auUv2P>>. Access on: 28 Aug. 2017.

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³⁵The operating system *Android* has about 12 million lines of programming. Source: <<https://goo.gl/4cxVE5>>. Access on: 27 Aug. 2017.

algorithms composed of collections of modules integrated to other modules, getting to unthinkable and unintelligible levels of complexity for the human being. The operating system of a smartphone, for example, has more than ten million lines of programming³⁵. The result from the work of large teams, part of it is based on open source systems, which in turn are developed by thousands of professionals, often anonymous, spread around the world.

Abstractions are sold as *cloud* computation, *artificial* intelligence, and *real-time* results as if they were synthetic products, spontaneously generated, rational and wise. However, the idiosyncrasies of a collective work of human brains, hands, and bodies, with doubts and imperfections, biases and values, prejudices and vices, chaotically agglutinated, connected and magnified by systems incapable of understanding them, are delivered.

Attached to an association for convenience, man and machine live a tumultuous relationship. When the machine finally abandons its gross stage and gives signs of interpreting human signs, it becomes so complex that there is not a single person who understands it as a whole. Combined, they create complex hybrids, fuzzy logic sphinxes, and erratic behavior. Which, opaquely, work.

According to the postphenomenological approach, technical artifacts mix with human agents in social life, and, as agents, they become susceptible to moral evaluation: as with human beings, technical artifacts and their actions may be qualified as *morally* good or bad. In this view, the image of objects as passive, morally neutral instruments are replaced by another in which their moral agency is present. As people, objects can be classified as *good* or *bad*, and this evaluation shows a little relation with their technical quality. It can be almost impossible to find a *good* revolver in this light, but a *bad* pillow can provide excellent nights of sleep and, at the same time, cause a possible suffocation.

In mediated reality provided by digital, social and interactive technologies, products, services, relationships, and goods dematerialize, they are translated into information and become quantifiable. Contextual actions adjust environments and mediations according to users' use, mood, preferences, habits, and social recommendations. The increasingly integrated experience makes the Internet (and the commercial forces of persuasion, influence, and domination that circulate through it) almost invisible.

Unified to the data flow that surrounds it, the contemporary individual sees digital technology transform into their preferred mediation and, in this process, change its nature. The machine and the services provided by it become a point of reference, the only symbols shared in societies composed of foreigners, in which the past community relations dissolve.

Interaction with the machine today, despite significantly better than it was a few decades ago, is still primitive. It is still possible to identify the moments in which it occurs and try, even if naively, to dispense with its presence when turning off the cell phone. Soon this communication will become pervasive, involving the social context with an intensity and a frequency never seen.

By interacting with actors whose origin and intention, not even the most qualified human being will be able to unmask, everyone will be dependent on a new epistemology of mediations with the machine. Derived from currents such as postphenomenology, it will tend to expand beyond the mediums, questioning the true mediatic nature.

In this context, each medium is constituted and transformed by the contents and mediations it receives, translates, recycles, assimilates and shares from other means. It will no longer be possible to question the nature of mediation without inquiring about the nature of the medium that harbors it. Ultimately, medium and mediation will tend to be equally fluid, indefinable, and inseparable. At this point, the medium will be mediation. As Martín-Barbero (2009: 163) put it,

if, instead of thinking about communication as domination, we thought about domination as a communication process? Because Gramsci taught me that there are two types of domination. First, there is gross repression [...] this domination is like the relationship between the military boot and the cockroach, between one and the other there can be no relationship but the crushing, and the cockroach has to run. But Gramsci also taught us the notion of domination as hegemony, and hegemony is made of complicity, seduction, fascination. And one has to think about “what, in the dominated ones, works in favor of the dominator”³⁶. ■

³⁶In the original: “se, em lugar de pensar a comunicação como dominação, pensássemos a dominação como processo de comunicação? Porque Gramsci me ensinou que a dominação é de dois tipos. Primeiro, há a repressão bruta [...] essa dominação é como a relação entre a bota do militar e a barata, entre uma e outra não pode haver uma relação senão de esmagamento, e a barata tem que correr. Mas Gramsci nos ensinou também a noção de dominação como hegemonia, e a hegemonia é feita de cumplicidade, de sedução, de fascinação. E há que se pensar sobre ‘o que, nos dominados, trabalha a favor do dominador’”.

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