

The McLuhan's tetrad in communication research: systematic review of applications in Brazil and Portugal

A téttrade de McLuhan na pesquisa em comunicação: revisão sistemática de aplicações no Brasil e em Portugal

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ABSTRACT

This article presents the results of an exploratory work to map the application of McLuhan's tetrad, in communication studies in Brazil and Portugal. The methodology used was the systematic review of the literature in the last decade (2009-2019). For such mapping, academic works (theses, dissertations, articles and chapters) were located from indexing systems, public repositories and specialized search engines. The goal was to discover how the tetrad has been applied and to which purposes. Finally, the potentialities of this tool, called McLuhan's "exploratory probe", are pointed out.

Keywords: Systematic review, McLuhan's tetrad, laws of media, media ecology

RESUMO

O artigo apresenta os resultados de um trabalho exploratório para mapear a aplicação da téttrade de McLuhan em pesquisas da área da comunicação no Brasil e em Portugal. A metodologia usada foi a revisão sistemática da literatura publicada na última década (2009-2019). Para tal mapeamento, trabalhos acadêmicos (teses, dissertações, artigos e capítulos) foram localizados a partir de sistemas de indexação, repositórios públicos e motores de busca especializados. O objetivo foi descobrir como a téttrade vem sendo aplicada e a que objetos. Por fim, são apontadas potencialidades da ferramenta, chamada por McLuhan de "sonda exploratória".

Palavras-chave: Revisão sistemática, téttrade de McLuhan, leis da mídia, ecologia da mídia

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INTRODUCTION

IF WE SEEK THE profile created for Herbert Marshall McLuhan (1911-1980) on Google Scholar (<https://bit.ly/2Z4SABI>), we will find more than 83,700 citations from 1995 until today. At the top of the list of cited works there is *Understanding media: The extensions of man*, originally published in 1964. This is the fifth book of the Canadian, considered one of the essential texts (or antitexts) for studies on communication (Meyrowitz, 2003). Throughout his career, McLuhan has gained both followers and critics. His ideas were controversial in the 1960s and 1970s and ostracized by academia in the 1980s¹, but they were recovered and strengthened in the new millennium, as many of his writings became predictions.

¹ Meyrowitz (2003) explains that by the late 1970s, "many of his terms still echoed in popular arenas, yet few who used them seemed to grasp their meaning or implications. And in scholarly arenas, his ideas were virtually banished. By the end of the 1980s, *Understanding media* and most of his other books were out of print. Moreover, scholars who tried to publish works about, or built on, McLuhan's frameworks often ran into resistance from peer-reviewer" (p. 205).

² Generally, an environment is a complex system that influences the ways we feel, think and act from more or less implicit codes and rules. McLuhan (1964/2007) draws attention to the understanding with the phrase "the medium is the message" on the first pages of *Understanding media*: "each technology gradually creates a whole new human environment. Environments are not passive wraps, but active processes" (pp. vi-vii, preface).

³ The terms figure and ground were inspired by Gestalt psychology (McLuhan & Powers, 1989/1992).

Although change incomplete and sometimes baffling, McLuhan's writing stands out from that of almost all his contemporaries as pointing clearly to dramatic structural changes in society and world affairs: changes in our experience of time and space, in borders and boundaries, in sensibilities concerning public and private, in categories of media content. (Meyrowitz, 2003, p. 209)

A particular idea of *Understanding media* stands out: the call to pay attention to the ways in which technologies created by human beings also act to shape or transform them, by generating environments² for action, thought and perception (Meyrowitz, 2003). This would be one of the meanings contained in the phrase "The medium is the message." Thus, to understand the effect of technologies on societies, we must move from the linear analysis of the contents to a holistic observation of the general effects of the media – these understood as any artifacts that expand or extend the human faculties, bodies and consciousness of those who use them.

Understanding the general effects and the functioning of a medium in a given spacetime context involves the exercise of perceiving figure/ground relationship. For McLuhan and Powers (1989/1992), all cultural situations are composed of an area of attention (figure) and an area of inattention (ground)³, the latter much more comprehensive. The ground is the environment that "provides the structure of or style of awareness, the way of seeing or the terms on which a figure is perceived" (p. 5). It can be interpreted as the context in which a medium, a technology, an organization, an institution or a body of ideas acts and is situated and in which it transforms and/or is transformed.

Due to this environmental and subliminal nature, studying the ground is a challenge. For McLuhan (1964/2007, 2005), there is usually only awareness of figures, and one can only perceive an environment when it is replaced by

another. The only antidote would be the construction of an anti-environment, a function to be performed by the artist, “the only person in the culture whose whole business is the retraining and updating of sensibility” (McLuhan & Powers, 1989/1992, pp. 5-6). But it would also be possible by the reflexive exercise of research and study of the media.

To enable this task, McLuhan builds, in his last years of life, an instrument proposing to reveal figure and ground, simultaneously, based on the recognition of the set of patterns of processes related to a technology or artifact. It is the tetrad of effects, a theory developed in two works: the books *Laws of media: The new science* (McLuhan & McLuhan, 1988) and *The global village: Transformations in world life and media in the 21st century* (McLuhan & Powers, 1989/1992)⁴. The tetrad is indicated as a flexible tool adapting to diverse research contexts, it also synthesizes and makes operational the most instigating statements of *Understanding media*, based on the formulation of four laws (or scientific principles) to which every medium would be submitted.

⁴Both published after McLuhan's death.

Based on the curiosity to verify how McLuhan's tetrad is appropriated by researchers in communication in Brazil and Portugal, this article presents the results of an exploratory work to map the application of the model in the last decade (2009-2019). The research strategy was a systematic review of the literature (Kitchenham, 2004; Petticrew & Roberts, 2006). As data sources, academic papers (theses, dissertations, articles and book chapters) located on public repositories, indexing systems and specialized search engines were included.

The investigation aims to discover how the tetrad has been applied, to which objects (theoretical, empirical) and whether the model is problematized in investigations (does research discuss its potentials and limits?). Throughout the review, other aspects stood out, such as the variation of translations in its nomenclature (e.g., tetradic method, tetrahedron, tetrads of the media effects. . .) and its four components.

This review aims to support future research that may adopt McLuhan's tetrad as a research tool, especially those including Media Ecology as a theoretical basis for studying products, processes and media communication practices, always related to the contemporary media ecosystem.

⁵*Laws of media: The new science*, unpublished in Portuguese, was published in 1988 after the death of Marshall McLuhan (1980). As Eric McLuhan explained, the elaboration of the tetradic form was a response to his father's critics about the lack of scientificity of *Understanding media* (McLuhan & McLuhan, 1988).

THE LAWS OF MEDIA AND MCLUHAN'S TETRAD

The four media laws represented in tetrad were drafted after an intense review of *Understanding media* undertaken by Marshall and Eric McLuhan⁵ to find claims that could be tested, proven or refuted by anyone, anywhere and at any time. In other words, which could be presented as scientific principles.



⁶For McLuhan, medium is a broad concept that is confused with technology, and it comprises any artifact that expands or extends human faculties, bodies, and the consciousness of those who use them. Not only television, radio, computer, but the hammer, wheel, money and plane are also media. The wheel would be an extension of the foot; radio, the extension that expands the voice to great distances. Writing extends voice or speech. Language, a technology that extends all human senses simultaneously. All represent, at the same time, amputations, because when a medium amplifies a sense or human faculty, it also falls asleep. The electronic agenda extends the capacity and volume of information and commitments storage beyond what could be measured; however, over time, it also seizes the natural memorization abilities. Therefore, in the adoption of technologies/extensions, human beings are permanently modified (in the ways in which they interact, perceive and interpret the world) and also modify (based on action) the surrounding environment and technologies themselves.

⁷Form, medium, artifact and technology are the units of analysis of the tetrad, according to the aforementioned works.

The development of media laws considered McLuhan's broad notion of the medium⁶. Therefore, such laws would be applicable to any technology or artifact, either hardware (for example, a pen, a computer) or software (a proposition, a scientific law), to any word or phrase, in any language. For the authors, "everything man makes and does, every procedure, every style, every artifact, every poem, song, painting, gimmick, gadget, theory, technology – every product of human effort – manifested the same four dimensions" (McLuhan & McLuhan, 1988, p. ix).

The laws of media that support the construction of tetrads are elaborated as questions related to the subject under analysis:

- Enhancement: as a human extension, every technology extends or amplifies any user's organ or faculty. What does the medium/artifact/form⁷ in analysis enhance, intensify, make possible, or accelerate?
- Retrieval: which actions, services, and characteristics of previous environments return or are retrieved by new medium/artifact/form? Which old ground is brought back and which one is inherent to this?
- Obsolescence: when one area of experience is enhanced or intensified, another is decreased or paralyzed. What previous condition is removed from the focus of attention or obscured by the new medium/artifact/form?
- Reversal: when pushed to the limits of its potential, a medium/artifact/form tends to reverse its original characteristics. What is produced or what the medium/artifact/form becomes when taken to an extreme? Or, what is the reversal potential of the object under analysis?

For each of these questions, there is not only a single correct answer. Eric McLuhan explains, in a more recent book in which he rescues the construction of the tool, that "all accurate answers are correct answers. When you have a clear answer to any of the aspects, ask 'what else?'" (McLuhan & McLuhan, 2017, p. 7). This observation highlights the character of "exploratory probe" of the method. This occurs because, according to McLuhan, exercise is especially conducive to understand situations in process of (re) structuring perceptions or environments (McLuhan & McLuhan, 1988). Notably, no hierarchical relationship between the four aspects exists: all aspects are observed simultaneously, for they are inherent to the object under analysis since the beginning.

Enhancement, which is associated with the improvement of human abilities, relates directly to *obsolescence*, since by highlighting the function or functions of a medium/technology/artifact, what came before is obscured or diminished. At the same time, perfecting something already existing implies *retrieval* in a past form. And not only specific functions or properties are retrieved, but also elements of previous media environments, assuming new form. Since the media ecosystem is constantly transformed by the relations of balance, imbalance and rebalancing between the species that compose it (Canavilhas, 2010), even though “old” media are redeemed, the environments generated will never have the same characteristics, since, in a different context (ground), different relationships are effected.

In the case of *reversal*, Logan (2011) explains that “when taken far enough, the new man-made medium/technology/artifact is reversed, giving a twist, becoming a complementary or possibly opposite form” (p. 7). However, this opposition is not absolute, as Levinson (1999) opposes, since the reversal expresses continuity of elements that, previously obscured, are recovered. The author exemplifies:

Radio, for example, amplifies the human voice instantly across vast distances to a mass audience. It obsolesces print as a mass medium, as when, for example, we receive our first word of an important news event on radio rather than via an ‘extra’ addition of a newspaper. It retrieves the town crier, who had been obsolesced to a large extent by print. And acoustic radio, when pushed to its limits, reverses into audio-visual television. (pp. 189-190)

Referring to the notion of medium as environment/extension, McLuhan and McLuhan (1988) indicate that the object of tetrad analysis is never neutral or passive, but an active expression of both mind and human body transforming both those who use it and its surroundings. Therefore, the tetrad is a representation of these four simultaneous processes, holistic and inherent to any medium/technology/artifact. Graphically, it is represented by a Möbius strip, a one-sided topological surface with the ends joined together, which represents a path with no end or beginning (Figure 1). McLuhan’s intention in selecting this topology was “expressing the persistently tently altering relationship of the tetrad’s process patterns” (McLuhan & Powers, 1989/1992, p. 182).

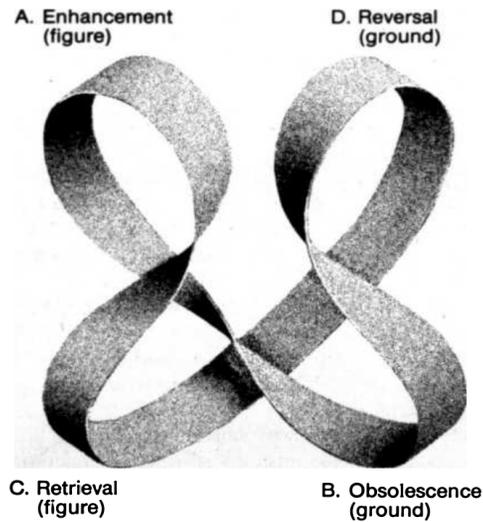


Figure 1. Reproduced from the book *The global village: Transformations in world life and media in the 21st century* (McLuhan & Powers, 1989/1992).

According to the authors, the recognition of patterns with the tetradic model has the potential to reveal initially invisible aspects of the environment/technology/artifact to human perception. Then this exercise requires careful observation of the artifact in relation to its ground, rather than abstract considerations (McLuhan & Powers, 1989/1992). Thus, the tetrad acts as an anti-environment, evidencing figure and ground simultaneously.

Regarding the *obsolescence*, as Logan (2011) explains:

The medium that enlarges some human function as well as the subject of the first law is the figure. The medium that suffers obsolescence and the medium that is recovered are the ground. And the new medium originated at the first law is the new figure. (p. 8)

Changes to the grounds modify the figures, and vice versa. McLuhan and Powers (1989/1992) add that the user's own context also functions as ground in the construction of the tetrad:

The tetrad not only reveals the configurational character of time, but also that the artifact (or founding idea) is always the product of the user's mentality. The tetrad includes the ground of the user, as utterer; and paradoxically, includes the user as

ground. We make ourselves and what we make is perceived as reality. For example, ample, an analysis of the effects of the printed word on another environment usually engenders quite different results. The tetrads for print in the United States, China, or Africa would have three different grounds. (pp. 201-202)

The use of the tetradic method can result in one or a group of interconnected tetrads. Any of the tetrad faces can inspire a new four-part mapping; the more you look at the first analyses, the more connections are made, because the four effects of the tetrad are rarely singular (Levinson, 1999). This occurs because each medium highlights, obscures, rescues and reverts to more than one thing. Similarly, different media can highlight, obscure, rescue or revert to the same things. For example, television rescues the visuality that the radio obscures. “And in so doing, television – what radio has flipped into – obsolesces the purely acoustic radio” (p. 191).

In this sense, the use of the tetradic model requires an effort to simultaneously look at the past (to the contexts that led to the creation of a certain medium, technology), to the present (to the uses, appropriations and relationships provided by the potentialities and restrictions of the analyzed object) and to a possible future (based on the identification of ongoing processes, whether of enhancement, obsolescence, retrieval or reversal). Due to the complexity it involves, the tetrad cannot result from a hasty work, for it is a challenge to involve the intellect and imagination in the search to understand the latent effects of the media in everyday life (Levinson, 1999).

RESEARCH AND METHODOLOGY ISSUES

The aim of this research is to verify how McLuhan's tetrad is applied, and to what objects (empirical or theoretical), in communication research developed in the last decade (2009-2019) in Brazil and Portugal. Based on mapping, it is intended to indicate potentialities and limitations of the tool, referred to by McLuhan and Powers (1989/1992) as “an exploratory probe.” With these purposes, the methodology used is the systematic review of the literature (Kitchenham, 2004; Petticrew & Roberts, 2006).

According to Petticrew and Roberts (2006), systematic reviews are literature reviews that adopt a set of specific methods and attempt to identify, to evaluate and to synthesize all relevant studies to answer a question or a set of questions. The search for the bibliography involves comprehensive sources (published or ongoing works, theses, articles, abstracts, etc.) and an explicit research strategy to minimize systematic error or bias. Therefore, systematic reviews are “It is



less of a discussion of the literature, and more of a scientific tool” (p. 10) and they can be replicated.

For Kitchenham (2004), undertaking a systematic review is useful to draw general conclusions about phenomena (more than would be possible from individual studies) and also to base future research activities. The author identifies three main phases: (1) *planning the review*, (2) *conducting the review* and (3) *reporting the review*.

The first phase – planning – involves clearly elaborating what to research and how to do it. In this work, the research question is as follows:

- How is McLuhan’s technology applied to communication research in Brazil and Portugal?

Based on this general question three new questions arise:

- Which objects (theoretical, empirical) are this technology applied?
- Is there any discussion about tetrad as a search tool in the identified searches?
- Are potentialities and limitations indicated by the authors? If so, which one?

Based on the definition of the questions the protocol is outlined, describing the whole process and the methods to be applied. It includes details of how the different studies will be located, evaluated and synthesized, as well as their dissemination (Petticrew & Roberts, 2006).

Thus, the strategies for search, selection and evaluation of the studies are presented in Table 1.

Table 1
Research protocol of systematic literature review

Types of study to be found	- Articles published in the annals of scientific and periodic events - Dissertations - Theses - Book chapters
Data sources	- Repositories of theses and dissertations: Bank of Dissertations and Theses and Catalog of Theses and Dissertations of Capes (Brazil) and Scientific Repositories of Open Access of Portugal (Portugal) - Specialized search tool: Google Scholar - Index terms: Web of Science; SciELO; Capes Journal Portal; B-On; Porbase (National Library of Portugal) - Others: not referenced in the above sources; the selected works include research in the bibliographic references
Language	- Portuguese
Period	- 2009 a 2019

Continued...

Table 1
Continuation

Keywords	<ul style="list-style-type: none"> - <i>tétrade</i> AND McLuhan - <i>tetrádico</i> AND McLuhan - <i>tetrádica</i> AND McLuhan - <i>tetraedro</i> AND McLuhan
Inclusion and exclusion criteria	<ul style="list-style-type: none"> - <i>Authorship</i>: production by researchers linked to universities/teaching and research organizations in Brazil and Portugal - <i>Area</i>: (large field) applied social sciences; (field) communication and sub-areas (according to the Conselho Nacional de Desenvolvimento Científico e Tecnológico/Coordenação de Aperfeiçoamento de Pessoal de Nível Superior). In the absence of search filters or clear authors' affiliation, publications in events or communication journals are considered - <i>Application</i>: works that do not present an effective application of the tetrad are excluded.

The phase of *conduct* includes the preliminary selection of studies, the evaluation of the work quality, the extraction of data and synthesis.

On this step, this review followed the following order:

1. Initial search based on keywords. Search filters were also used, when available, based on inclusion/exclusion criteria (e.g., period, large field, field).
2. Preliminary selection of articles. Based on the analysis of the keywords and abstracts, a preliminary selection of potentially relevant works was made. PDF files were saved to folders on the computer, initially organized by database.
3. Refinement of the results as many times as necessary. It involved the analysis of the full texts saved in the previous step. Those that did not meet the inclusion criteria were removed, especially regarding the effective application of the tetrad. Duplicate texts and translations of original texts in other languages were also excluded at this step.
4. Reading of the papers, consolidation of the definitive list and data extraction. The selected papers had the data of interest tabulated in electronic spreadsheets, in order to answer the research questions and identify other relevant information. The following items were filled in: title; authorship; year; type of work; country; university/program/journal/event/book; stage of the research in which the tetrad is applied and (possible) justifications for use; translations (of the model and the four faces); application object(s); potentials and limits indicated; abstract; and link to the work. Again, duplicate texts that did not fit the investigation

criteria, not detected in the previous phase, were excluded. A list of 21 papers for critical assessment was reached.

5. Critical assessment. This step was made possible based on notes made in the reading phase of the papers aiming to future comparisons and synthesis of the results.

Figure 2 shows the workflow of our review. The data sources in which there was no return in the searches for the keywords indicated were not included in the figure.

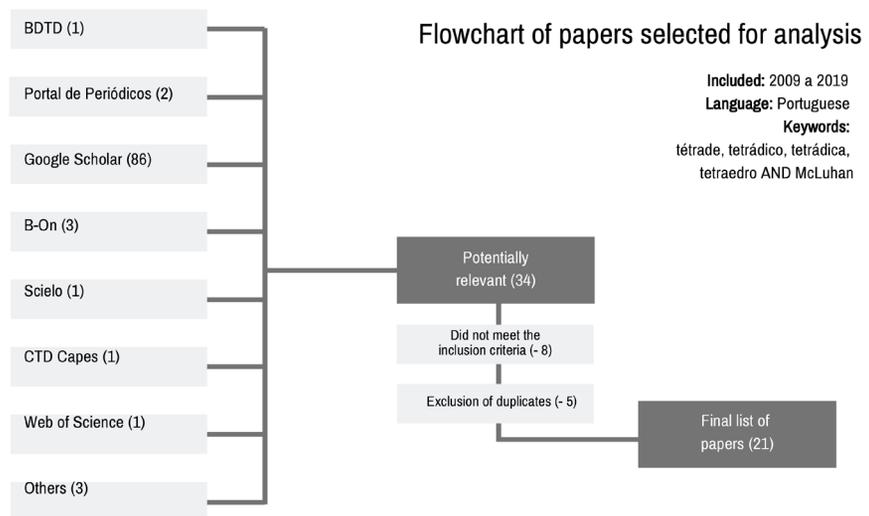


Figura 2. Flowchart of the selection of papers for analysis. Research conducted in May 2019.

The following item is related to the last step of the second phase of the systematic review (Kitchenham, 2004), the synthesis. This activity involves comparing the selected works and summarizing the results, combining description and quantitative data.

SUMMARY OF RESULTS

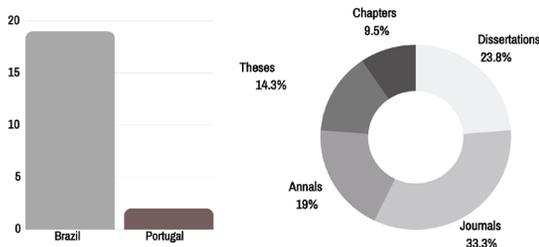
In the 21 studies analyzed, a varied use of the tetrad was identified, both as a tool for analyzing technologies, platforms and media as well as notions and concepts. A summary of the composition of the sample is presented in Figure 3. Social networks, specifically Facebook, were the most frequent theme (Ghisleni & Barichello, 2013; Boss, 2015; Pereira, 2015a, 2015b). The following are mobile

devices/interfaces (Alves, 2017; Oliveira, 2017), aspects of cinema (Monteiro, 2014; Oliveira Filho & Ribeiro, 2011), internet memes (Regiani, 2017; Regiani & Borelli, 2015) and educational platforms (Boss, 2015; Boss & Figueiredo, 2015).

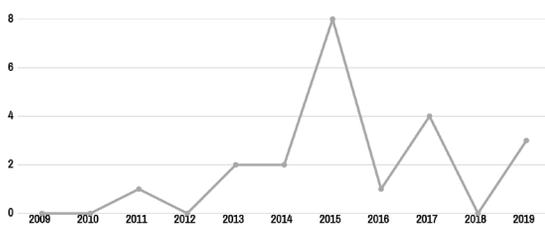
Other uses were: graphic newspaper design (Machado, 2015), digital internal communication (Costa & Miguel Neto, 2017), digitization (Stangl, 2016), network technology (Abreu, 2014), television in cyberspace (Capanema & France, 2013), location-based system (Reino, 2015), journalistic data monitoring tool (Dall'Agnese & Barichello, 2019) and the use of drone for audiovisual narrative (Pessoa & Gosciola, 2019).

An example of application to concepts/notions/theories, Nakagawa (2015) rescues the tetrad to situate the relationship between cliché and archetype – subject of another work by McLuhan (McLuhan & Watson, 1970) – to outline the aspects that would characterize an epistemology of the media based on McLuhan. Among the applications to media platforms, the analysis of Facebook by Pereira (2015a) stands out. The author indicates that the use of tetrad as a strategy for the exploitation of Facebook seeks, in addition to illuminating a fundamental aspect of contemporary culture, “to rescue a moment of McLuhan’s work that is still little discussed, betting that there can be found an original and fruitful perspective for the investigation of technological and media objects” (p. 536).

Sample composition



Publications per year



Identified applications

- Social Networks: Facebook (4)
- Aspects of cinema (2)
- Mobile devices/interfaces (2)
- Internet memes (2)
- Educational platforms (2)
- Cliché and archetype (1)
- Digital internal communication (1)
- Digitization (1)
- Journalistic data monitoring tool (1)
- Graphic newspaper design (1)
- Location-based system (1) Network technology (1) Television in cyberspace (1)
- Use of drone for audiovisual narrative (1)

Figure 3. Summary of data extracted based on the selected works. Research conducted in May 2019.



Cases of adaptations are also identified to meet specific research objectives. Silveira (2019) relies on the tetrad to propose its own model, in which the four operators transform into: write, describe, rewrite and des-cribe. In this case, the tetrad is adapted to what the author calls the German Media Theory: instead of pointing to “the effects that the emergence of a new media caused on the others existing in the same media ecology,” as McLuhan did, Silveira suggests that the outbreak of theories causes “tensions in these epistemological ‘theoretical ecologies’” (pp. 25-26).

Dall’Agnese and Barichello (2019) propose an adaptation in the context of the study of journalism in the digital media ecosystem. In this case, the four faces refer to indicators of possible reconfigurations of journalistic practices, processes and products: adaptation, innovation, maintenance and rupture. The authors observe that, by the contrast of current and previous aspects, tetrad is useful to indicate trends, consolidated or ongoing transformations, recognizing that no change is isolated.

The presence of reflection on tetrad as a methodological tool in communication research, or even notes about the potentialities and limits based on applications, was verified in only five of the 21 studies (Abreu, 2014; Alves, 2017; Dall’Agnese & Barichello, 2019; Pereira, 2015a, 2015b). In these, the exploratory character and complementarity to other research methods and techniques are highlighted.

Abreu (2014) understands that tetrad “does not eliminate other exams, criticisms and evaluations” (p. 9), including the development of the ideas it summarizes. In Pereira’s (2015a) view, the result of exploitation based on the laws of media are more clues to the investigation than rigid answers about the object of study. In his work, he proposes that a step of description precedes the construction of the tetrads:

it is proposed that before launching into the dynamics of the tetrads, an earlier stage of investigation tries to apprehend the technological object regarding its characteristics, dynamics and logic of operation. This step should be undertaken based on the collection of the largest possible volume of data about the investigated object. (p. 540)

Considering the aspects verified in this first stage, the second part of the investigative path, of application itself, is defined by the author as an open moment of exploration and “reflections and intuitions not necessarily objective, but which, in turn, may help to reveal future movements of a given technology” (Pereira, 2015a, p. 548).

In the same context, Dall'Agnese and Barichello (2019) state that the definition of the micro (organizational) or macro (institutional) context from which it is intended to analyze processes, practices and/or journalistic products objects of research is fundamental to guide the composition of the tetrads. Moreover, they interpret tetrad as a possible articulating tool of data collected throughout a broader research, contributing to the study of journalism in an ecosystem manner.

Alves (2017) highlights the “tetrads of media effects” as conducive tools to study the convergences and hybridizations of contemporaneity, in which methods of the type “that do not limit, but, otherwise, increase, extend or, heuristically, unveil horizons” (p. 46). Then, she concludes that, with tetrads, the interpretative possibilities in the analysis of different interfaces expands, “since not only changes introduced in the apparatus are considered, but the psychosocial and cultural transformations that induce it” (p. 49).

On the other hand, a possible misunderstanding was verified in Machado's text (2015), when he observed, in his analysis of the architecture of an online newspaper page, that “there do not seem to be examples of media that have been pushed to the limit” (p. 107). McLuhan and McLuhan (1988) stress that the tetrad “presents not a sequential process, but four simultaneous processes. Each four aspects are inherent to each artifact from the beginning” (p. 99). As complementary and inherent to any technology, medium or artifact, the tetradic exercise does not seek different objects to illustrate each of the faces, but rather analyze an object based on the four dimensions.

Notably, the reference to the application of the tetradic model or to the *construction or composition of tetrads* does not necessarily imply their graphic representation, but the discussion of objects (whether theoretical, whether empirical) based on the four laws of media. Out of the analyzed studies, only six presented the analysis in form of a figure or table in four parts (Alves, 2017; Costa & Miguel Neto, 2017; Dall'Agnese & Barichello, 2019; Boss, 2015; Patrão & Figueiredo, 2015; Silveira, 2019).

Finally, the issue of variations in translation stands out, an aspect perceived during the systematic review. Since *Laws of media* (McLuhan & McLuhan, 1988) and *The global village* (McLuhan & Powers, 1989/1992) have no editions published in Portuguese, there is no consensus on how best to translate certain terms into that language. The wide possibilities of free translation are added to the variations present in both works. The questions used as basis for laws of the media, for example, despite maintaining the main ideas, are elaborated in different ways throughout the chapters of the two publications.

The model itself is named in multiple ways, justifying our keywords option. In the works selected here, the following names are presented: *modelo tetrádico* – tetradic model (Oliveira, 2017); *tétrade dos efeitos midiais* – tetrad of the media effects (Alves, 2017); *tétrade dos efeitos de mídia McLuhaniana* – McLuhanian's tetrad of the media effects (Silveira, 2019); *teoria tetrádica de McLuhan* – McLuhan's tetradic theory (Ghisleni & Barichello, 2013); *modelo de tétrade para análise dos efeitos dos media* – tetrad model for analysis of media effects (Patrão & Figueiredo, 2015); *tétrade de Laws of media* – Laws of media tetrad (Monteiro, 2014); *tetraedro* – tetrahedron (Oliveira Filho & Ribeiro, 2011).

Considering the four components, the greatest amount of variations in translation refers to the verbs of the first face of the tetrad, enhancement. The following translations were found: *acentua* – accentuates (Alves, 2017; Boss & Figueiredo, 2015); (Abreu, 2014); *amplia* – amplifies (Pessoa & Gosciola, 2019); *aperfeiçoa* – perfects (Reino, 2015); *umenta* – increases (Nakagawa, 2015); *estende* – extends (Costa & Miguel Neto, 2017; Ghisleni & Barichello, 2013; Monteiro, 2014; Regiani, 2017); *incrementa* – increments (Pereira, 2015a); *intensifica* – intensifies (Alves, 2017; Person & Gosciola, 2019); *melhora* – improves (Regiani, 2017); *potencializa* – potentiates (Alves, 2017; Pereira, 2015a, 2015b); *realça* – highlights (Patrão & Figueiredo, 2015).

In the others, it is unanimous the translation of retrieval as *recuperação* (of something rendered obsolete) and of *reversal* as *reversão*, except for a few variants: *transformação* – transformation (Alves, 2017; Monteiro, 2014) and *inversão* – inversion (Nakagawa, 2015). Finally, *obsolescence* translated into most works as “*obsolescer* (to obsolesce)” or “*tornar obsoleto* (to become obsolete),” but also as “*condenar ao desuso* (condemn to disuse)” or “*pôr fora de moda* (to become old-fashioned)” (Alves, 2017).

FINAL REMARKS

The systematic literature review enabled a mapping of 21 applications of McLuhan's tetrad in communication works developed in the last decade in Brazil and Portugal. The examples showed the range of possible uses and the potential of the tool to address complex phenomena, software or hardware, always related to the context in which technologies or theories arise and are situated in society.

In academic research, we can consider the communicational view as a primordial context (or ground), enabling us to apprehend an empirical object (whether a technology, product, practice, process) as an object of communication knowledge (France, 2016). The theoretical background is also added, underlining underlies each particular research. These notions, mixed with the

individual perception of researchers, will define what will be seen and questioned to the object of the tetrad. Therefore, even if analyses of the four processes (*enhancement, obsolescence, retrieval, reversal*) are constructed based on the same empirical objects, we will not have, in different researches, equal tetrads.

For this reason, it is important that the path traveled (from observation, theoretical review, data collection) to the construction of the tetrad is clear in the research report. This movement is highlighted, for example, by Pereira (2015a, 2015b) when proposing a descriptive step before the application of the tetrad. The affiliation of the model is equally relevant to be highlighted, which is, firstly, a synthesis of McLuhan's career, of his main ideas. This is effective in some works selected based on theoretical reviews (e.g., Nakagawa, 2015; Oliveira Filho & Ribeiro, 2011; Pereira, 2015a, 2015b; Person & Gosciola, 2019; Stangl, 2016).

Regarding the potentialities, the character of "exploratory probe" (evidenced by McLuhan himself and reinforced in the analyzed studies) of the tetrad can be useful at many times, either to sharpen the perception in the formulation of a problem or even to articulate data collected throughout a research. The exercise can be repeated as the investigation progresses and/or changes are verified in the context analyzed. As a result, individual tetrads or groups of interconnected tetrads can be created.

By inviting the analysis of an object always in relation to others, the tetradic model puts media, technologies and artifacts in perspective and allows comparisons over time. Television tetrad in the 1960s, for example, can base the construction of tetrad on today digital TV. If we also consider that changes in information and communication technologies are never isolated, a set of tetrads with different objects of analysis can be more enlightening to understand general transformations of society in relation to a particular environment. Or even to present an overview of media mutations over time.

On the other hand, this exploratory character of the tetrad can also be pointed out as one of its main limitations as a research tool. It is an interesting way to organize perceptions about an object – as an opening exercise, not closing. Therefore, it is useful as one of the components of the theoretical-methodological tooling of a research, but not enough to draw conclusions in a broader investigation.

Considering the small number of studies that effectively applied the model, an obstacle to the diffusion of the tetrad may lie in the complexity of the exercise required by the tool, which demands an approach at complementary and contradictory aspects of a study object. As Levinson (1999) has indicated, the tetrad challenges the intellect and imagination to understand the latent effects of the media in everyday life. This involves: the observation of a medium



characteristics in the present time; the study of what preceded and/or originated it; and even speculation about future scenarios. The wide range of possible results adds to this complexity: a single object can generate multiple tetrads, the more revisions are made.

The breadth of the very notion of medium and the many interpretations of other categories and metaphors contained in Marshall McLuhan's work can also be obstacles to the use of tetrad as a research tool for communication studies. Although *Laws of media* (McLuhan & McLuhan, 1988) and *The global village* (McLuhan & Powers, 1989/1992) gather dozens of application examples, the four media laws are theoretically poorly developed, which can hamper the identification of aspects to be pointed out in each of the parties.

In this sense, new discussions, developments and even adaptations of the tetrad would be interesting to expand its reach among research in communication. Until then, considering the studies that comprised this review, the adoption of the model as a methodological tool in the area seems incipient and lacking in problematization. As for proposals to adapt the faces of the tetrad, only two were verified (Dall'Agnese & Barichello, 2019; Silveira, 2019).

Furthermore, the variety of translations into Portuguese, especially due to the absence of a single nomenclature for the model, may hamper the identification and grouping of similar works. Thus, we do not discard that many other applications not comprehend by our keywords and search criteria can be verified in the available literature.

In the future, reviews should be made in other countries, periods and languages – including the original publications. The protocol and the steps used here may be a starting point for future efforts in this direction. ■

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