

The Mediatization of Memory^a

Mediatização da Memória

SAMUEL MATEUS^b

Universidade da Madeira, Labcom. Funchal – Portugal

ABSTRACT

In times of intense mediatization, we face the problem of the potential defragmentation of memory in the face of an open and infinite virtual space. Understanding the role of memory in contemporary societies implies contemplating its mediatized expansion, responsible for the profusion and acceleration with which societies produce memorial traces. This paper presents the main schools of thought in memory studies and traces the current political and social implications of memory. Also, it analyzes the role of media on the very notion of memory, namely, the paradox of digital memory, the shortening and pollution of memory caused by digital media, and the Internet as a kind of palimpsestic memory of the present time.

Keywords: Collective memory, memorialization, Halbwachs, media, internet

^a *MATRIZES* has chosen to adapt the text to the new spelling of the Portuguese language, while retaining the characteristics of European Portuguese.

^b PhD in Communication Sciences. Professor at Universidade da Madeira. Researcher at Labcom. Author of *Media Discourse* (in Portuguese) (Livros Labcom, 2021). Orcid: <https://orcid.org/0000-0002-1034-6449>. Email: samuelmateus@uma.pt

RESUMO

Em tempos de intensa mediatização, aparece o problema da potencial desfragmentação da memória perante um espaço virtual aberto e infinito. Compreender o papel da memória nas sociedades contemporâneas implica contemplar sua expansão mediatizada, responsável pela profusão e aceleração da produção de traços memoriais pelas sociedades. Este artigo apresenta as principais correntes de pensamento dos estudos da memória e traça as atuais implicações políticas e sociais da memória. Além disso, analisa o papel dos media sobre a noção de memória, nomeadamente, o paradoxo da memória digital, o encurtamento e a poluição da memória provocada pelos media digitais, e a internet como uma espécie de memória palimpséstica da atualidade.

Palavras-chave: Memória coletiva, memorialização, Halbwachs, media, internet

CYBERCULTURE IS THE set of techniques, practices, ways of thinking, attitudes and values instituted with the emergence of cyberspace (Lévy, 1999). Cyberspace is understood as an interactive and communitarian communication device that emerges from information technologies. It dates to the 1950s, resulting from the intersection of cybernetics and computer science (Lemos, 2002), and coincides with the expansion of telematic networks on a global scale, being, therefore, a privileged instrument for the development of a collective intelligence (Lévy, 2000).

Understood as a network, cyberculture designates the new possibilities for creating, storing, disseminating, and sharing information and knowledge based on the interconnection of computers and marks a new moment in the mediated organization of societies. The idea of “network” points to the openness, flexibility, and interdependence of cyberculture itself to which the digital communication infrastructure – cyberspace – gives rise.

To that extent, cyberspace and digital media, in particular, can be seen as a true memory technology, in which potentially all of humanity’s records are being digitized and made available online. This is an externalized and objectified human memory that is thus a technical memory (Stiegler, 2009, p. 11).

It is as if all libraries (records, documentation centers, videos, comments, shares, newspapers, documents etc.) converged into cyberspace, making the internet a gigantic library that collects all traces of human activity. Thus, the relations between man and memory are being reformulated, which apparently conflict a weak memory (which, by being diffuse and superficial, disorganizes meaning) and a strong memory (massive, coherent, and compact that organizes meaning) (Candau, 2011, p. 44).

Now, the problem that arises is the potential defragmentation of memory at a time of strong mediatization, especially in the face of mnemotechnologies (press, television, digital media), including the Internet as a potential open and infinite virtual space.

The mere existence of memory transmission infrastructures does not necessarily promote social ties. The sharing and interconnection of memories through media – an artificial and less organic memory – may not lead to the same shared meanings (Candau, 2011, p. 115) capable of functioning as the aggregating cement of society.

Therefore, trying to understand the role of memory in contemporary societies leads us to contemplate its mediatized expansion, responsible for the profusion and acceleration with which societies produce memorial traces (from patrimonialization, going through monuments and commemorations, to the mnemonic dimension of the internet).

MEMORY AS IDENTITY

For Schopenhauer, conceiving an individual without a past is just as impossible as conceiving a people without history. A society devoid of historical knowledge – if you will, of a shared memory – is incapable of reflecting on the present and drawing lessons for the future. The Western canon views memory as a personal, individual, and unique capacity, and this unique and unrepeatable character would distinguish individuals from one another. The modern sense of identity is thus linked to the memories that individuals possess (Giddens, 2002). This assumption is today questioned by science fiction literature itself.

For example, cyberpunk – a subgenre of science fiction that works on issues related to artificial intelligence and cybernetics – questions the notion that identities are defined by personal memories. A very significant number of works describe the implantation of memories in the human brain (Cavallaro, 2002, p. 205). The short story “We Can Remember it for You Wholesale” by Philip K. Dick, or the films *Blade Runner* by Ridley Scott, *Total Recall* by Paul Verhoeven, or *Johnny Mnemonic* by Robert Longo, depict worlds where memories can be simulated, revised, and artificially created. Bruce Sterling’s novel *The Artificial Kid* tells of a character whose memories have not been experienced, but rather transferred and downloaded. Moreover, cyberpunk insistently stresses how vulnerable human memories are to contamination and distortion. In his various books, William Gibson questions the possibility that memories are untouchable and unrepeatable. After all, they are not endowed with lived experience, but rather sets of data manipulated to simulate lived experience.

In all these stories, fiction interrogates the nature of memory – individual and collective – by challenging the assumption of a stable and unshakable correlation between memory and personal identity. In many ways, cyberpunk illustrates some of the changes that cyberculture, computers, and the Internet have imposed on the question of memory, leaving us with intriguing interpellations. For example, in the world of widespread technical reproduction, what place is reserved for authenticity? To what extent can we believe and verify these memories? How to conceive the exercise of remembrance when memories are externalized before the individual?

All these questions accentuate the importance of reflecting about memory and acquire renewed interest with the emergence of cyberculture and the unavoidable role of media in contemporary experience.

MEMORY STUDIES

Studies about memory have a transdisciplinary dimension and date back to the beginning of the 20th century, when different scholars were interested



in the intersections between culture and memory, such as Sigmund Freud, Henry Bergson, Arnold van Gennep, Émile Durkheim, Maurice Halbwachs, Aby Warburg, and Walter Benjamin. The 1980s saw the birth of a renewed interest in how individuals and societies access memory and remember. Thus, the “new cultural memory studies” emerged, driven by Pierre Nora’s *Lieux de Mémoire*, which offered a new way of thinking about national repertoires of collective memory construction. Historical and political changes offered the backdrop for a turning point in memory studies. Forty years after World War II and the Holocaust, without organic and autobiographical memories to aid the memorialization process, societies became more dependent on media (including monuments and memorials) to transmit experience (Erll, 2008a, p. 1).

Maurice Halbwachs is the most recognized and cited author within memory studies. His books *Les Cadres Sociaux de la Mémoire* (1925) and, above all, *La Mémoire Collective* (1950) revolutionized our understanding of memory by highlighting the social contexts that serve as the basis for recollection. Drawing inspiration from Durkheim’s concept of collective consciousness and the two types of memory (habitual and pure) proposed by Henry Bergson, Halbwachs challenges the prevailing ideas of psychology by stressing that memory cannot be considered only in subjective, individual terms, but that it is a socially structured process. Individuals not only acquire their memories in society but also remember and recognize them socially. “To evoke his own past, a person generally needs to resort to the memories of others, and transport himself to reference points that exist outside himself, determined by society. More than that, the functioning of individual memory is impossible without those instruments which are the words and ideas that the individual has not invented, but borrows from his environment” (Halbwachs, 2013, p. 72). Halbwachs, thus, suggests the existence of a collective memory, shared among the members of a society, which exists externally to the consciousness of the individual, but which is an integral part of social life. This means that societies can even produce memories of events in individuals who have never directly experienced them. In other words, collective memory is a pathway to collective consciousness, and is viewed in a very Durkheimian (Misztal, 2003, p. 138) manner, similar to a social fact. However, while Durkheim assumes a unified society, Halbwachs accounts for the multiple and plural constitutions of collective memories.

While Halbwachs proposes collective memory as a mediating instance between individual and society, Jan Assman is more interested in considering the social and communicative structures that social groups use to evaluate social representations objectified in various symbolic forms (architecture, writing, image, objects) which assist the memorialization process. Assman (1995, p. 126)

thus proposes the concept of communicative memory to designate the varieties of collective memory that are based exclusively on everyday communications. He thus discriminates between subvariants previously grouped under the generic notion of collective memory, considering the oral realizations that contribute to socially constituting memory. According to the author, everyday communication is characterized by non-specialization, role reciprocity, and thematic instability. By these mundane interactions, each individual composes a socially mediated memory embedded in a social group. However, from the moment we enter the world of objectified culture (texts, buildings, monuments, statues etc.), we move away from the concept of communicative memory and have before us a *cultural memory*.

Just as the communicative memory is characterized by its proximity to the everyday, cultural memory is characterized by its distance from the everyday. Distance from the everyday (transcendence) marks its temporal horizon. Cultural memory has its fixed point; its horizon does not change with the passing of time. These fixed points are fateful events of the past, whose memory is maintained through cultural formation (texts, rites, monuments) and institutional communication (recitation, practice, observance). (Assman, 1995, pp. 128-129)

Like Assman, Joël Candau (2011) breaks down the concept of memory by discriminating and detailing the general aspects contained in the notion of collective memory. He describes three memories: proto-memory, very close to Bourdieu's *habitus*, expresses an embodied social memory (for example, in gestures and language practices), taking place automatically, "almost without awareness" (Candau, 2011, p. 23); memory proper, which takes place by voluntary evocation; and metamemory, the form of a claimed memory that deals with identity construction and the representation we make of our own memories. For Candau, protomemory and memory are at the level of individual faculties and therefore cannot be shared. For the anthropologist, only metamemory can be shared, since it assumes a set of representations of memory. Therefore, the metamemory covers Halbwachs' concept of collective memory and can be the object of a social structuring of the past. Note, however, that for Halbwachs, collective memory forms a mnemonic unit (simultaneously individual and social) whereas Candau's protomemory is particularly situated at the level of collective agencying and an organizing memory.

As it can be seen, the concept of memory in the Social Sciences and Humanities is slender and composed of many nuances, as evidenced by the various decompositions it has undergone. The difficulties in the proposals



of Halbwachs, Assman, and Candau in discerning what should be included (or excluded) from collective memory also demonstrate the enormous breadth (conceptual and practical) of the concept. This attribute is also reflected in the importance of memory, as we will see below.

POLITICAL AND SOCIAL IMPLICATIONS OF MEDIA ON MEMORY

The way individuals and societies remember and forget today is largely affected by political, social, cultural, but also technological changes. Indeed, one of the most influential factors in shaping our collective memory is the modern mass media. The mediatization of memory (Hoskins, 2009) thus becomes an unavoidable dimension of memory studies, prompting a renewed examination of the nature of memory, remembering, and forgetting in the context of new technologies. In the media age, the question of memory must be evaluated according to digital media and sociotechnical practices, such as cyberculture.

The incorporation of media studies in contemporary theories of memory leads Erl (2008b, p. 4) to refer to a *medial memory* (material or medial memory) which deals with the enlargement that writing, film, television, or the Internet have caused in the spatial and temporal horizon of memorialization. Each *medium* has its own specific ways of developing the process of remembering and of leaving its own traces in the collective memory to which it contributes. In particular, the intramedial, intermedial, and plurimedial dynamics have the power to produce and shape cultural memory (Erl, 2008b, p. 390). In practice, memorialization is a trans-media process: the representation of events is not confined to a single medium, but spills over across a broad spectrum of media. This is precisely what makes considering media in memorialization processes so pertinent: media is a powerful agent of (individual and collective) memory. Not only do they play a decisive role in stabilizing the memory of certain events, but they also have the potential to create memories. They provide us with certain mental schemas that allow us to remember and, simultaneously, provide a platform for reproducing the meaning of these same memorialization processes. They disseminate memories, but in doing so, given their sociotechnical particularities, they (re)create or retrace the meaning pathways of memory, reshaping and directing its very development.

In particular, digital media, by allowing recording, production, editing, and dissemination, opens simultaneous – sometimes conflicting – paths in the memorialization process.

With new communication and information technologies, with digital and personal communication devices, the technological mediation of the screen and

the reproducibility of the image (and the event) become modes of sensation and perception – of feeling and seeing the world –, of retention and memory. (I. Babo, 2018, pp. 89-90)

In the twenty-first century, the articulation of memory with media has two main consequences (cf. Hoskins, 2009, pp. 28-30). First, the media confronts memories with their permanent exposure. Resulting from a confessional culture exacerbated by reality television, digital media intensifies the visibility of individuals' private and remote pasts, turning them into new devices of social surveillance. The relationship with forgetting is more complex now since this movement of revelation seems to point precisely to this impossibility. If everything can be rescued, memory controls forgetfulness. Second, the new media makes memory not only more visible and accessible, but also more fluid and dispersed. In *La Mémoire Collective*, Halbwachs (1950, p. 50), when referring to a group memory, points out that it does not imply the physical presence of the members of this social group. Now, this is precisely what we observe in digital media. The virtuality and the spatial and temporal deferral that appear as remediation (in the sense that Bolter and Grusin give it) demonstrate new ways of reproducing and creating memories. The concept now dispenses with the copresence of individuals, losing a physical dimension and acquiring a liquid nature (to paraphrase Bauman). The horizontal connections such as peer-to-peer enabled by the new media make memories de-territorialized, in global and diffuse spaces, besides transforming memorialization into an immediate and prolix process.

Media also streamlines memories that are shared but that may not have been directly experienced by individuals, giving rise to prosthetic memories, that is, “memories that do not originate from a person's lived experience in the strict sense” (Landsberg, 1995, p. 175). Since media and cyberculture have an enormous influence on what we experience, they are privileged arenas for the production and circulation of prosocial memories. By operationalizing the process of memorialization, mass media re-enacts and stimulates memories that most individuals have never directly experienced (for example, the lunacy of the Apollo 13 mission or the exhilarating excitement of a world soccer championship). Memories are, thus, originated in the media, and for this reason the media functions, in the good manner of McLuhan, as an extension or prosthesis of memory. We collectively share memories that would never exist without the interference of the media. Our relationship with the world and the events has become so mediatized that real experience or real time is inseparably associated with cyberculture and socio-technical mediations. On the other hand,



this ubiquity of media makes it difficult to discern between directly lived experience and lived experience (through media). Prosthetic memory thus tends to replace the experienced memory itself.

The fact that the internet operates as a kind of colossal archive and a gigantic database authorizes us to describe it as exercising a transactive memory, that is, a system by which individuals collectively encode, store, and retrieve knowledge (Wegner & Ward, 2013). The internet is an archive in the sense of a device for storing information, but also for retrieving it. And it even interacts with individuals (for example, by congratulating you on your birthday or responding to voice commands). The Internet seems to know everything about everyone, and companies and individuals take advantage from this efficiency to pursue their goals. With Google, Wikipedia, or databases like IMDb, information is retrieved, used, and shared much faster than if we only used our memory. The ease with which the result of an online search emerges blurs the boundaries between personal memories and transactive memories.

In fact, the internet today is used as external memory or transactive memory where information is collectively deposited outside ourselves (Sparrow et al., 2011), and is one of the best examples of functional specialization and resource allocation. As we increasingly rely on cyberspace to perform our daily tasks, we no longer have to remember information; all we need is to know *where to find and retrieve it*. Much of our collective memory comes from these internet-based memories and our symbiosis with computers and cyberspace. We move, today, among interconnected and transactive systems that have transformed collective memory into a reticular and external memory. A prosthetic memory, similar to hard disks, offers us the advantage of accessing vast sources of information without having to possess or even know this information in depth (for example, the Internet teaches us the route to the restaurant without us having to know its address). This means an adaptation to our technological environment since trying to remember a lot of specific information is, now, less efficient than remembering how to access that specific information.

Sparrow et al. (2011) concluded in an empirical study that students expected to have future access to information (via the internet) and therefore were less likely to remember specific information although they remembered how to find that information. In another empirical study, Fisher et al. (2015) determined that searching for information on internet increased an individual's confidence in her own knowledge. In other words, it inflated the perception of their internal knowledge – even though this confidence was due to a memory extrinsic to the individual.

On the other hand, one must consider the effects of information overload on the very idea of memory. The 21st century has accentuated the emergence of a

new ecology, in which information constitutes a new environment. Virilio (1996), for example, mentions that we live in a kind of Chernobyl accident of information. The idea of associated catastrophe is related to its polluting potential. Infopollution (Sutter, 1998) designates the set of disturbances related to the quality of data and information. It makes an analogy between the Industrial Revolution (18th and 19th centuries) and the Information Revolution (20th century), in which information is equated with the environmental pollution generated by the earlier industrialization.

In particular, infopollution refers to the paradox that we live in information societies that are quantitatively rich but qualitatively poor, that is, not very enriching and that have more to do with entertainment than with enlightenment. In contrast to the poor information substance, we are faced with massified content that floods our digital devices and occupies much of our attention, such as advertisements, spam, or clickbaits. We find them in various online portals, which present us with qualitatively depauperate content such as: “Draw – see Ronaldo’s reaction” or “Actress Kristen Stewart says ‘wearing Princess Diana’s wedding dress was scary’”. If we put the emphasis on the qualitative aspect of information, we speak of infopollution. In contrast, the notion of *information obesity* points to the quantitative dimension and highlights the problems caused by an excess of information, both in terms of its production and its accessibility.

The notion of memory cannot, consequently, be dissociated from the excess and contamination of information since these will have direct repercussions on what we remember (and what, by excess, we are unable to remember). Infopollutants such as the exhaustive repetition of the exact same news pieces or the instant messages of social network chats distort the processes of memorialization by colonizing the cognitive space of individuals and societies. With so much information available and with today’s abysmal acceleration, memory must be equated according to the perverse effects of information excess (obesity) and qualitative poverty (pollution). The more we know, the less we seem to know about the details and particulars that form the dense network of memory. We became overwhelmed by the voracity of information. The saturation that the media accentuates then makes the process of memorialization increasingly rarefied, as individuals find themselves drowned in the technologization of memory that made this possible in the first place. Just as pollution leaves waste in the atmosphere, this new information ecosystem leaves inconvenient residues on the surface of our social memory.

Consider the unforeseen effects of two practices which are increasingly present in daily life: zapping and browsing. These are new behaviors that have emerged in the context of this new ecology of information. Faced with



the immensity of stimuli and the flood of information that the media have brought with them, zapping and browsing are established as cognitive strategies. Instead of grasping the content in its entirety, individuals access a portion of the information by browsing through successive titles, windows, images, videos, etc. On the other hand, faced with the inability to read, consult, and analyze exhaustively and integrally the information currently produced, we, as a society, have developed this prodigious capacity for zapping. This consists of watching only a few minutes (or even seconds) of a television program, reading only the covers of newspapers to keep up with current events, or listening to clipped excerpts from radio stations. On the internet, social networks and YouTube are organized around both browsing an indistinct and voluminous mass of content and, simultaneously, zapping (an individual can watch 5 minutes of each 60-minute video, for example).

All this underscores the individual and collective consequences of the mediatization of memory and how the new socio-technical practices that emerged with cyberspace have fundamentally altered our collective relationship with memory. In the interconnections of digital networks presence, number, and acceleration prevail; the spatiotemporal coordinates of action (and of the event) fade away and, thus, the relation to time and place blurs. To this extent, the narration or the *mise-en-intrigue* of the action has no place on the network and, as a result, the sense of history is also dissipated (I. Babo, 2018, p. 79).

In this sense, digital media tend to be hypertextual (number of posts and new information imperative in non-linear reading) rather than narrative (linear and successive reading).

The internet and its transactive dimension have only intensified the first step, already taken by media, to make memories prosthetic devices.

FINAL CONSIDERATIONS

We leave three lines of reflection to future considerations on the place of memory in the media (therefore, in society in general).

The first line of reflection concerns the paradox of digital memory: the more information we store in cyberspace, the less information we have. By relying, absolutely, on the digital archives and the transactive paths of the Internet, we end up knowing many things collectively, but individually risk diminished knowledge. We know how to get information, and we deposit it in devices external to our personal memory; however, many times we cannot remember without technological intervention. “The advent of the information

age seems to have created a generation of people who feel they know more than ever before – when, in fact, their reliance on the internet means they know less and less about the world around them” (Wegner & Ward, 2013). With the internet, we transcend the organic limit of our memory. And with that limit comes this risk of an amnesia, which calls for new ways of interacting with information. Cyberspace can thus paradoxically make memory simultaneously expand and contract, strengthen or weaken. Cyberspace may include this risk of forgetting, but it is up to us as a society to deal with and overcome this paradox.

The second line of reflection relates to the acceleration of the production of memories that digital media made possible. In shared knowledge networks, where information is instantaneous, memories become fast. Events succeed each other, discourses multiply, and memories seem to be constantly in the process of being reformulated or updated. The sensation, in digital media, is that only the now exists and that the present recovers the past. Faced with the imposition of the present, the danger is that we form only short-lived memories. Long, historical, anthropological memory needs time to build, deconstruct, and reconstruct itself. In a network where information accumulates, memory can tend to be short, syntagmatic or extemporaneous, aligned with fashions (the trending of social networks). This represents a challenge for societies, which must foresee mediatized ways of producing a collective, long, historical, and paradigmatic memory.

The third line of reflection sums up how we have characterized the nature of memory. If we had to highlight the central idea of this paper, it would be that memory is palimpsestic. All the decompositions listed here point to this polyfaced, collective, and shared nature in sociotechnical practices of mediatized societies. The challenge is, then, to understand if the hyperindustrialization of memory (Stiegler, 2009) empties it, or, on the contrary, enrich it in the new technological configurations. The dispersion of (dematerialized) technical memories can either lead to the impoverishment of experience, or to the optimized reconfiguration in new frameworks of collective memory.

The various theoretical and empirical approaches to the memory studies referenced here, all share the idea that memory is a kind of multi-handed rewriting. The internet has, therefore, exponentiated the generating and regenerating dimension that memory contains within itself. Faced with the danger of memory dilution, building strategies for creating a historical and narrative memory is necessary. It is up to the mediatized societies in which we live to decide which of these possibilities will predominate. ■

REFERENCES

- Assman, J. (1995). Collective memory and cultural identity. *New German Critique*, (65), 125-133. <https://doi.org/10.2307/488538>
- Babo, I. (2018). Mídia, tempo e memória. *Vista*, (2), 77-95. <https://doi.org/10.21814/vista.2995>
- Babo, M. A. (2009). Escrita, memória, arquivo. *Revista de Comunicação e Linguagens*, (40), 45-51.
- Candau, J. (2011). *Memória e identidade*. Contexto.
- Cavallaro, D. (2002). *Cyberpunk and cyberculture: Science fiction and the work of William Gibson*. The Athlone Press.
- Erl, A. (2008a). Cultural memory studies: An introduction. In A. Erl & A. Nünning (Eds.), *Cultural memory studies: An international and interdisciplinary handbook* (pp. 1-17). De Gruyter.
- Erl, A. (2008b). Literature, film and the mediality of cultural memory. In A. Erl & A. Nünning, *Cultural memory studies: An international and interdisciplinary handbook* (pp. 389-398). De Gruyter.
- Fisher, M., Goddu, M. K., & Keill, F. C. (2015). Searching for explanations: How the internet inflates estimates of internal knowledge. *Journal of Experimental Psychology*, 144(3), 674-687. <https://doi.org/10.1037/xge0000070>
- Giddens, A. (2002). *Modernidade e identidade*. Zahar.
- Halbwachs, M. (1925). *Les cadres sociaux de la mémoire*. Librairie Félix Alcan.
- Halbwachs, M. (1950). *La mémoire collective*. Presses Universitaires de France.
- Halbwachs, M. (2013). *A memória coletiva*. Centauro.
- Hoskins, A. (2009). The mediatization of memory. In J. G. Hansen, A. Hoskins & A. Reading (Eds.), *Save as... Digital memories* (pp. 27-43). Palgrave Macmillan.
- Landsberg, A. (1995). Prosthetic memory: Total Recall and Blade Runner. In M. Featherstone & R. Burrows (Eds.), *Cyberspace/cyberbodies/cyberpunk: Cultures of technological embodiment* (pp. 175-189). Sage.
- Lemos, A. (2002). *Cibercultura. Tecnologia e vida social na cultura contemporânea*. Sulina.
- Lévy, P. (1999). *Cibercultura*. Editora 34.
- Lévy, P. (2000). *A inteligência coletiva: Por uma antropologia do ciberespaço*. Loyola.
- Misztal, B. (2003). Durkheim on collective memory. *Journal of Classical Sociology*, 3(2), 123-143. <https://doi.org/10.1177/1468795X030032002>
- Sparrow, B., Liu, J., & Wegner, D. M. (2011). Google effects on memory: Cognitive consequences of having information at our fingertips. *Science*, 333(6043), 776-778. <https://doi.org/10.1126/science.1207745>
- Stiegler, B. (2009). Anamnese e hipomnese. *Revista de Comunicação e Linguagens*, (40), 11-26.

Sutter, E. (1998). Pour une écologie de l'information. *Documentaliste – Sciences de l'Information*, 35(2), 83-86.

Virilio, P. (1996). *Velocidade e política*. Estação Liberdade.

Wegner, D. M., & Ward, A. F. (2013, December 1st). The internet has become the external hard drive for our memories. *Scientific American*.
<https://bit.ly/3bgTMKh>

Article received on November 12, 2021, and approved on June 9, 2022.

