

Disintermediation of information: A new phenomenon of study for information science

Carlos Alberto Ávila Araújo^a

^aFull Professor, Information Science School, Federal University of Minas Gerais, Belo Horizonte, 31270-901, Brazil.

E-mail: carlosaraujoufmg@gmail.com.

Received: 19 July 2023; Accepted: 1 Nov 2023

This article presents the concept of disintermediation of information. This notion concerns the impression that many subjects have that some information that reaches them is mediated by certain subjects or institutions, but that there would be other information that would reach them without mediation. To discuss the concept, we start with the notions of expert systems and epistemic authority. Next, various phenomena are correlated based on three criteria: those that recognize the legitimacy of epistemic authorities and information mediation institutions (such as fake news and fake science); those who seek to destroy the legitimacy of these institutions (false testimonials, conspiracy theories, hate speech); and the context in which such phenomena occur (disinformation, infodemic, and post-truth). It is concluded that it is necessary to understand the phenomenon of disintermediation, its causes, characteristics and consequences, in order to strengthen institutions that mediate information and recover the necessary confidence for the citizenship and democratic consolidation of contemporary societies.

Keywords: Information science, Infodemic, Disinformation, Disintermediation of information, Post-truth.

Introduction

In the 1960s and 1970s, several books and scientific articles were produced about the so-called “information society.” There was hope, and a promise, of great advances for humanity, in its various dimensions (politics, economy, work, human rights), through greater access to information, made possible by technological developments. Decades went by, and there was, in fact, a great technological advance in the field of information, with the creation of microcomputers, the internet, search engines, social networks, smart phones, among others. However, the promise of a more rational, democratic, and inclusive society has not been fulfilled. Recent works designate the current moment with other expressions: “the great regression”¹, “the society of control”², the “Orwell world”³, the “society of ignorance”⁴, or “the society of ignorance”⁵.

The use of names like these to characterize the current moment has a reason: the wide growth in the circulation and access to information turned out to be accompanied by a gigantic growth in the circulation of false information, hate speech, conspiracy theories, which have been driving people to make decisions and act based on lies and distortions, to adopt authoritarian positions, denial, violence, and prejudice⁶.

Researchers from various scientific fields (sociology, anthropology, political science, computer science, law, economics, social communication, among others) have been dedicated to studying the phenomenon. This also caused many different terms to be used to describe this new informational scenario. Expressions such as fake news, scientific denial, post-truth, infodemic, disinformation and others have been widely used, although often without a clear conceptual precision, and even without a rigorous distinction between them. At the same time, the literature has pointed out that, in an attempt to identify the causes, characteristics, and consequences of this new informational reality, researchers have identified several associated phenomena: the so-called “cult of the amateur”⁷, “bubble effect”⁸, “bias confirmation”⁹, “regimes of ignorance”¹⁰, growth of “national populism”¹¹, among others.

It is in this scenario of scientific production that the present work is inserted. The objective here is to identify and analyze, among the various phenomena normally identified with the current informational reality, a specific issue: that of the so-called “disintermediation of information”. This notion is directly related to a position, widely disseminated among different users, of questioning and doubting information mediators, both professionals (journalists,

professors, scientists, librarians) and institutional (media, museums, universities, schools), while, at the same time, they believe that the information that arrives through social networks and search engines (mediated by certain algorithms and technical and market criteria, thereby based on a business model that encourages competition for attention, through sensational, scandalous, and false content), and even by certain opinion leaders and digital influencers, it would be “direct” information, without mediation, therefore, in the logic of these people, authentic and non-manipulative¹². The idea of disintermediation of information, thus, is not related to an effective process in which peoples’ relationship with information would no longer be mediated (which, in fact, would be impossible) but to the idea of some people that access to information through certain means and channels would be direct and not mediated – in a process accompanied by distrust of the consolidated means of mediating information¹³. In this sense, “disintermediation of information” is a kind of denunciation concept, that is, a concept used to describe an impression or illusion that subjects have about reality. At the same time, in the phenomenon of disintermediation of information, there is a “free” circulation of messages without institutional counterweight, that is, without verification and certification for professional action that can be held responsible¹⁴.

To address the subject, an analysis is also carried out on some of the different concepts associated with this phenomenon, showing its relationship with the issue of disintermediation. It is important to highlight that several other concepts are associated with these phenomena, such as algorithm, robots, deep fake, false identity, virtual private network, and many others¹⁵, but which will not be presented here due to the limits of the article and the research conducted so far.

2. Information mediation as an expert system

The starting point of the analysis proposed here is the broad understanding of modernity conducted by Anthony Giddens¹⁶. In his analysis of how the transition from pre-modern societies to modernity took place, the author identifies the occurrence of several phenomena that profoundly changed the various dimensions of human life (politics, economy, culture, regulation, work). These phenomena produced a new way of life and social organization that emerged in Europe from the 17th century

onwards, and which later became worldwide in their influence. Among these changes is the so-called disengaging of social systems, which altered spatial and temporal relationships and inserted a rationalized organization into human life. Giddens is dedicated to studying these mechanisms, which are of two types: symbolic tokens and expert systems. Both fundamentally depend on trust: it is essential for the constitution of modernity’s institutions.

Expert systems are defined by Giddens as structures of technical excellence or professional competence that organize large areas of the material and social systems in which we live. The author brings, as an example, a ladder, which we use with the certainty that we will not fall, that it will not break – that is, we accept the risk, because we believe in the expertise of those who produced it. Expert systems work in all spaces and environments. Each person, throughout their lives, is faced with situations and problems in which their own knowledge is null or rudimentary (for example, the need to undergo surgery, or the repair of microelectronic equipment) and those situations attribute protagonism in solving problems to another professional actor, endowed with recognized knowledge in that area. The activities start to take place, therefore, despite the knowledge of each of the people involved.

Expert systems allow a vast range of human activities to be performed with greater effectiveness, efficiency, accuracy, and productivity, precisely because they are performed by people with specific training, prior knowledge, and skills. In caring for the body, housing, food, human relationship, in all spheres of human life, it is possible to have a more rational and productive action based on guidance by a functionally instructed and specialized professional. This has happened, therefore, in medicine, engineering, nutrition, gastronomy, and in several other fields. It also took place in the informational field.

Before proceeding, it is important to point out that the performance of expert knowledge is not a creation of modernity. Before modern societies, there were craftsmen’s guilds, artisans, specialized knowledge, even universities. The novelty brought by modernity was a complex structure for validating and certifying these expert systems, through professional training courses, supervisory boards, regulatory legislation, among others. And, above all, a broad promotion of the trust to be placed in such expert systems, precisely because of the entire previous certification.

Thus, with the process of consolidation of modernity, institutions responsible for the production and circulation of certified knowledge were also consolidated: universities, research institutes, schools, journalistic companies, among others. Each of them has certain instruments and methods for the production, conference, validation and certification of the knowledge produced or put into circulation, so that they become cognitive authorities or epistemic authorities^{12, 13}.

In addition, other institutions took on the task of facilitating access to the knowledge produced by such authorities. They are the information mediation institutions. Libraries, archives, museums, and other institutions that deal with human registered knowledge have existed for centuries and conduct, using the current categories of thoughts, actions of “information mediation,” in the sense of acting together with human knowledge by selecting, preserving, organizing, disseminating. In modernity, such institutions are supported by scientific knowledge (archival science, library science, museum studies) that provide institutional, professional, legal, and technical support for their interventions with the societies in which they operate. Such institutions and knowledge, throughout their existence in modernity, dealt with different issues: the universalization of access to their contents (democratization); the search for diversity in their collections and actions (epistemic justice); the sophistication of instruments for organizing the knowledge (efficiency for preservation and recovery), among others. In recent years, however, an additional challenge has been posed to its performance: the denial of its own foundations, of its legitimacy, in favor of theories and narratives that would be biased, indoctrinating institutions, promoters of falsehoods, pedophilia, of misrepresentation of people. It is in this scenario, in which different intertwined phenomena act, that the phenomenon of disintermediation of information is constituted.

3. The associated phenomena

Among the various terms used to characterize the contemporary informational moment, it is possible to distinguish three types of relationships with the issue of disintermediation: terms that refer to phenomena in which modern institutions are recognized and distorted; those that refer to phenomena of delegitimization of modern institutions; and those related to the context in which such phenomena occur.

The first type is related to practices that recognize the legitimacy of modern institutions of knowledge about reality: journalism and science.

The first relevant concept in this discussion is fake news. The term became relevant in 2016⁶, when it was used extensively by the candidate for president of the United States, Donald Trump, to disqualify and defame the mass media when they presented facts that disfavored him. Thus, the term was used precisely to delegitimize journalistic institutions, questioning their reliability. Therefore, there is resistance to the use of this term by journalists and communication scholars, due to the fact that, if it is false, then it is not news – news being understood as a journalistic category. The abundant use of the term, however, ended up making it fundamental for the understanding of our time. Literally, fake news means false news. The first element of their characterization is their falsehood: they are produced with the intention of lying, deceiving, distorting, or hiding the truth. The second element is that they seek to be perceived as true journalistic news. In other words, fake news is part of a strategy that recognizes the legitimacy of journalistic speech and journalistic institutions and, instead of questioning this legitimacy, they actually take advantage of them to have credibility. Not only from journalism, but also from universities, institutes, science – often fake news appeals to “experts,” scientists, professors, politicians, some fake, others with distorted speech.

Fake news, therefore, are lies disguised as journalism. They can originate from a website that copies, in appearance, the characteristics of a journalistic website; they may have as their name or web address the same name as an existing institution, with a different letter; they can be signed by people who introduce themselves as journalists without being one, or by people with the name almost identical to that of recognized and respected journalists or columnists. The text uses the typical structure of journalism – language, interviews, support in expert assessments, images, among others.

It is important to highlight the fact that, obviously, it is not meant here that the media always tell the truth. Decades of scientific studies have demonstrated how journalistic vehicles are companies that serve or are susceptible to certain interests of economic, political, military, religious groups, etc.¹⁷. However, they have always been institutions with headquarters, registration, hired employees and, to build their

credibility, they were never able to invent completely false facts, under penalty of being held responsible and discredited. Distortion of facts, framing favorable to one group or unfavorable to another, silence about discrediting facts of their funders, listening to only one side of the issue, mixing opinions in informative content are some of the various strategies to shape or distort reality according to certain interests. The novelty brought by fake news is the construction of a completely false report, news of a fact that never happened, and its presentation in the mold of journalistic discourse. The strength of fake news resides in the inability (or disinterest, as will be pointed out below) of people in differentiating one type from another, attributing the same degree of reliability to different content just by the appearance of the informational content.

The other concept is fake science, associated with the phenomenon of scientific denial. Many studies show that questions of science have been around for a long time, coming both from common sense, from established authorities in traditional practices, as well as from religious leaders. But negationism as an articulated strategy has, according to historians, a very precise origin: the mid-20th century, when science discovered the links between smoking and cancer^{9, 18}. Once scientific truth was established, the mighty tobacco industry needed to ensure the survival of its business. Tobacco industry groups created a foundation, began funding scientists to say it was not entirely certain that smoking caused cancer (because, of course, they could not prove otherwise), and disseminate the idea that any debate on the topic in universities, schools, or the media, should present both “sides” of the issue, that is, those who are sure it causes cancer, and those who say it might. This led to the idea that there were two sides to the issue and, for the lay public, the idea was consolidated that there were scientists who said that it causes cancer and those who said that it does not. This was enough to sow doubt and ensure business continuity. In the following decades, similar strategies were created by business, industrial, and political groups to promote ideas such as, for example, that global warming does not exist, that vaccines cause disease, and even that the Earth is flat.

The core of the issue of scientific negationism, also called fake science, is that every time science discovers a truth that dislikes a certain group (country, business, religion, etc.), this group mobilizes efforts to

discredit science and even strengthens itself with the confluence of other negationist movements.

Associated with fake science is pseudoscience, which tries to sell ideas, products, and services without scientific validity using strategies such as scientific language and the evocation of authority figures¹⁹. Unlike fake science, when a false fact is presented as if it were scientific evidence, often accompanied by attacks on established science, in pseudoscience cases an idea of “alternative” science is resorted to, which would be developing in a way parallel to institutional science and still waiting for effective validation.

Alongside scientific negationism, there is also historical negationism. Denial of the existence of the holocaust is certainly the best-known example, but there are others equally serious, such as the denial of torture in dictatorial regimes, or that there was no corruption in dictatorships, or that regimes that suppress individual freedoms and implement the policy of torture and killing of political opponents were not dictatorships, among many others. Both scientific negationism and historical denial benefit from the phenomenon of clickbaits, the click hunters²⁰. These are groups or people who perceive the potential for visibility of the production of negationist content and do it precisely to obtain views and, with that, economic resources. For many decades, studies on sensationalism have shown the great popularity that misleading content can achieve, but nowadays this dimension is added to the high degree of sophistication in the use of this resource and its link with political, economic, or religious interests.

The second type of related phenomenon is that in which actions are taken to destroy the legitimacy of modern institutions, through the destruction of the trust on which they depend to act. False testimonials, conspiracy theories, and hate speeches fit in this characterization.

The first phenomenon, therefore, is false testimonial^{21, 22}. It is the old gossip, or rumor, but with a sophistication provided by technological devices (filming and voice) which, unlike fake news, is built in opposition to institutions, in the belief that universities, schools, scientists, journalistic vehicles, international organizations are all manipulators, indoctrinators, conspiratorial agents and, therefore, do not deserve credibility. Testimonials are produced by persons who present themselves as “ordinary” people, who use colloquial language, grammatical errors,

amateur footage, and who defend these characteristics as a virtue – the fact that they are simple, everyday people, “just like the person who watches” becomes the criterion of legitimacy, credibility, in opposition to the manipulative forces of the institutions of the so-called “system.” The report strength, degree of emotion of the author or presenter, and importance of the facts presented (usually secret, because they are being hidden precisely by the institutions) add narrative strength to this informative modality. Some facts are directly related to the emergence of this modality, such as the so-called culture of amateurism⁷, and the false equivalence⁹.

Conspiracy theories constitute a second type of phenomenon, in which a supposed critical position is promoted by people (distrust of all institutions, governments, official bodies) in favor, however, of adherence to a certain leader who would be the great “revealer” of conspiracies²³. The conspiratorial attitude generates a fundamental element in the position of those who become adept at them: it is that there is no possibility of a contradictory, of a counterargument based on evidence, as conspiracy is always secret, hidden, therefore, it does not need evidence, fact base, to be believed. The narrative in which one believes matters more than the facts⁶.

The third phenomenon is hate-speech. Unlike the first two, it does not seek to be factual, it does not intend to present a fact of the world. It is a phenomenon, therefore, different from the others presented in this text, as it does not depend on the truth. Rather, it talks about the intentions, desires, needs, and fears of a certain individual or group of individuals – for example, that immigrants return to their countries, that feminism disappears, and everything goes back to the way it was before, that a certain political group be exterminated^{24, 25}. Its intention, and in this it is complementary to the first two, is to mobilize people to act with emotion and not with reason, and that is why it plays a key role in the analysis undertaken here. More specifically, with certain emotions (fear, resentment, hate) in order to provide aggressive reactions, especially in relation to disagreement. The other is no longer seen as an adversary, bearer of different ideas or points of view, and becomes an enemy to be eliminated, and the whole objective of informational spaces becomes to defeat the other²⁶. In this modality, the facts mentioned may be true or not, the intention is to put people in a state of war – but it is precisely this

emotional condition that predisposes people to put aside the search for the truth in favor of the most urgent objective of winning the discussion at any price. Hate appears as a redeeming affection for individuals who are afraid or resentful; it provides the experience that something is being done against fear or the source of fear²⁴.

The third set of terms is related to attempts to describe, in general, the informational moment we are living. These are expressions that end up characterizing the context of the phenomena.

The first of these terms is disinformation. This expression has been used, contemporarily, with two meanings²⁷. One of them refers to the sophisticated techniques of production of lies, therefore, the strategic and intentional dimension of production of falsehood. It is about identifying groups that produce and disseminate fake news, testimonials, hate speech, which select the best channels for each one of them, articulate the complementarity of speeches in each modality, identify the opponents to be neutralized.

In this sense, one of the most successful strategies has been the hijacking of postmodern ideas about truth. The postmodernist movement developed throughout the 20th century as an artistic, cultural, and also a philosophical movement. Among its characteristics is the questioning of the idea of the existence of an absolute, unique truth, that is, there would not be a correct answer about what each element of reality means. The denunciation that any statement of truth would be an authoritarian act, because it was always ideological, ended up being a criticism hijacked by political movements to say that everything would be ideological and, therefore, there would be no “truth,” only “alternative facts” – an expression used by President of the United States Donald Trump on several occasions when he lied and was confronted by journalists, scientists, or members of the judiciary with the evidence of the true facts²⁸.

The other use of the expression disinformation concerns the effects of these actions, that is, the state of chaos, confusion, doubt, generated in large sections of the population that precisely need and/or seek information to define their opinions and make their decisions. In this second sense, misinformation is very close to the next concept to be presented, that of infodemic.

Infodemic, of all the concepts presented here, is the least developed²⁹. The association of the terms information and pandemic thus characterizes a

pathological characterization of the informational dimension: the gigantic scope and speed of dissemination of false information has produced a situation in which false information is more present in peoples' lives than true and quality information and end up having much more influence in decision-making and in defining courses of action. This constitutes a "pandemic" nature of informational phenomena, taken from the perspective of their adverse effects or dysfunctions.

An explanation of the meaning of this expression is also present in the discussion about informational disorder³⁰. The authors argue that while there is extensive research on the historical impacts of false information and rumors, there is a set of new developments in the contemporary moment: information pollution on a global scale level; a complex web of motivations for the production, dissemination and consumption of these "polluted" messages; a myriad of content types and techniques for amplifying such content; numerous platforms hosting and playing this content; and dizzying speeds of communication between people who trust each other.

Finally, there is also the expression post-truth. Many people criticize its use, identifying that it would actually be a fad or a mere synonym for a lie with a different package^{9, 12, 31}. But the researchers who proposed it as a scientific concept warn that it does designate an unprecedented question in history. This is what is expressed in the Oxford dictionary definition, which emphasizes that, in the post-truth scenario, appeals to emotion (hence the importance of hate speech) and personal beliefs (hence the importance of conspiracy theories and negationism) are more important in forming opinion than the facts of reality⁶. Post-truth is a phenomenon that occurs at the confluence of three conditions. The first of these is the widespread dissemination of false information (completely false, and not just distortions as in the mass media era) with technological support that allows unimaginable reach in the era of gossip and rumors. The second is the possibility of checking these days, in which many people can, in a few seconds and with everyday devices such as smartphones or notebooks, check the veracity of the information received by them in any medium. The third is the fact that people do not do that, i.e., do not check, do not verify if information is true or false, before passing it on and appropriating it. It is this disinterest, this disdain for the truth, that marks what has been identified as a "post-truth

culture"¹⁸ or a "post-truth regime"³². The expression culture precisely designates a set of values, naturalizations, stimuli to a certain behavior – in this case, contempt for the truth, valuing what confirms preconceived ideas, selecting only what is comfortable. Post-truth characterizes a contemporary imagination in which disregard for the truth is naturalized, stimulated, exalted, as a value or a virtue⁶.

It is the conjunction of this set of factors, which represent both the deliberate strategy of producing lies and spontaneous actions performed by people in everyday life, which produce the conditions for the disintermediation of information: a loss of confidence in the mediators of information (journalism, school, university, science, libraries, archives, museums) as bearers of true, certified, reliable information. In its place, there is trust in populist, political, or religious leaders, or in people who present themselves as ordinary and disinterested, or fraudsters posing as journalists or scientists. On the one hand, strategic actions of false content (fake news, fake science), by effectively producing lies, undermine trust in expert information systems, precisely by spreading the lie – by creating a scenario of contradictions, doubts, chaos³³ and destruction of reputations and political, democratic, and professional institutions²⁸. On the other hand, deliberately distrustful actions in expert systems, which appeal to emotions, conspiratorial feelings, fear and hate, lead individuals not to act rationally. Providing a favorable climate for both actions, disinformation and infodemic scenarios make up the context in which these actions take place.

4. Final considerations

Research in information mediation inside information science^{34,35} has pointed out several research questions relevant to the field: its own definition as a new theoretical position and professional performance; its characteristics as an intervention with documents and institutions; its necessary link to issues such as democracy and plurality, among others. The current scenario, of widespread production, circulation, and appropriation of false information, poses new challenges for the mediation of information^{36, 37}. The new informational phenomena challenge the existing categories of thinking in order to diagnose the current moment and also to think of ways for combating its harmful effects^{38, 39}.

Returning to Giddens' reflection, it is essential to remember that institutions produced in modernity

sought to improve the conditions of human life, in all its spheres and dimensions. Of course, they are not perfect, and their constant improvement must be sought. The action of its destruction, and replacement by other forms of action, should be seen with criticism – especially when such actions are at the service of totalitarian, authoritarian, and exclusionary ideologies, aiming at the construction of new forms of domination instead of human emancipation and social justice.

Thus, combating the perverse effects of infodemic and, by extension, the disintermediation of information, is essential. Several actions in this regard have been identified by researchers from various areas: the promotion of critical competence in information or digital literacy; creation of mechanisms for certifying the veracity and quality of information; construction of accountability mechanisms for crimes committed through false information; increased visibility and circulation of checking services; and mobilization of strategies to clarify bubbles and their “puncturing”^{40, 41}. The effective implementation of such actions is fundamental above all for the maintenance of certain values built over the last centuries: democracy, inclusion, defense of diversity, encouragement of a culture of peace⁴².

Acknowledgement

The author thanks the National Council for Scientific and Technological Development of Brazil (CNPq) for supporting this research, through a research productivity grant.

References

- 1 Geiselberger H, O grande retrocesso, (Objectiva; Lisbon), 2017.
- 2 Souza J, Avelino Rand Silveira S, A sociedade do controle: manipulação e modulação nas redes sociais, (Hedra; São Paulo), 2018.
- 3 Gómez de Águeda Á, Mundo Orwell: manual de supervivencia para un mundo hiperconectado, (Ariel; Madrid), 2019.
- 4 Mayos G and Brey A, La sociedad de la ignorancia, (Península; Barcelona), 2011.
- 5 Serrano Oveja J F, La sociedad del desconocimiento: comunicación posmoderna y transformación cultural, (Encuentro; Madrid), 2019.
- 6 D’Ancona M, Post Truth: the new war on truth and how to fight back, (Ebury Press; London), 2017.
- 7 Keen A, The cult of the amateur, (Currency; New York), 2007.
- 8 Magallón Rosa R, Unfaking news: cómo combatir la desinformación, (Pirámide; Madrid), 2019.
- 9 McIntyre L, Post-truth, (MIT Press; Cambridge), 2018.
- 10 Kirsch T G and Dilley R E, Regimes of ignorance: anthropological perspectives on the production and reproduction of non-knowledge, (Berghann; Oxford), 2015.
- 11 Eatwell R and Goodwin M, National Populism: the revolt against liberal democracy, (Pelican Publishing Company; New Orleans), 2019.
- 12 Rieh S Y, Credibility and cognitive authority of information. In Bates M and Maack M N, Encyclopedia of Library and Information Sciences, (Taylor and Francis Group; New York), 2010, p. 1337–1344.
- 13 Froelich T J, The role of pseudo-cognitive authorities and self-deception in the dissemination of fake news, *Open Information Science*, 3(1), (2019) 115-136.
- 14 Dalkir K and Katz R, Navigating fake news, alternative facts, and misinformation in a post-truth world, (IGI Global; Hershey), 2020.
- 15 Wardle C, Information disorder: The essential glossary, (Shorenstein Center on Media, Politics, and Public Policy, Harvard Kennedy School; Harvard), 2018.
- 16 Giddens A, The consequences of Modernity, (Stanford University Press; Stanford), 1990.
- 17 Pellicer Alapont M P, La comunicación en la era Trump, (UOC; Barcelona), 2017.
- 18 Wilber K, Trump and a post-truth world, (Shambhala; Boulder), 2017.
- 19 Marçal D, Pseudociência, (Fundação Francisco Manuel dos Santos; Lisboa), 2014.
- 20 Aparici R and García-Marín M, La posverdad: una cartografía de los medios, las redes y la política, (Gedisa; Barcelona), 2019.
- 21 Argemí M, Los siete hábitos de la gente desinformada, (Conecta; Barcelona), 2019.
- 22 Frankfurt H, On bullshit, (Princeton University Press; Princeton), 2005.
- 23 Proctor R, Agnotology: a missing term. In Proctor R and Schiebinger L, Agnotology: the making and unmaking of ignorance, (California Stanford University Press, Stanford), 2008.
- 24 Fukuyama F, Identity: The demand for dignity and the politics of resentment, (Farrar, Straus and Giroux; New York), 2018.
- 25 Greifeneder R, Jaffé M, Newman E and Schwarz N, The psychology of fake news: accepting, sharing, and correcting misinformation, (Routledge; London), 2021.
- 26 Emcke C, Against hate, (Polity Press; Cambridge), 2019.
- 27 Cosentino G, Social media and the post-truth world order: the global dynamics of disinformation, (Palgrave; Cham), 2020.
- 28 Kakutani M, The death of truth: notes on falsehood in the age of Trump, (Tim Duggan; New York), 2018.
- 29 Naeem S and Bhatti R, The Covid-19 ‘infodemic’: a new front for information professionals, *Health Information and Libraries Journal*, 37(3), (2020) 233-239.
- 30 Wardle C and Derakhshan H, Information disorder: Toward an interdisciplinary framework for research and policy making. Council of Europe Report, 27, 2017. [Online]. Available at <https://rm.coe.int/information-disorder-toward-an-interdisciplinary-framework-for-research/168076277c>. (Accessed on 08 Jul 2023).

- 31 Fuller S, Post-truth: knowledge as a power game, (Anthem; London), 2018.
- 32 Broncano F, Puntos ciegos: ignorancia pública y conocimiento privado, (Lengua de Trapo; Madrid), 2019.
- 33 Empoli G, Os engenheiros do caos, (Vestígio; São Paulo), 2019.
- 34 Bawden D and Robinson L, Introduction to information science, (Facet; London), 2012.
- 35 Furner J, Truth, relevance, and justice: towards a veritistic turn for KO. In Ribeiro F and Cerveira M E, Challenges and Opportunities for Knowledge Organization in the Digital Age. *Proceedings of the Fifteenth International ISKO Conference*, Faculdade de Letras, Universidade do Porto, A9-11 July 2018, p. 468-474.
- 36 Peters M, Rider S, Hyvönen M and Besley T, Post-truth, fake news, viral modernity & higher education, (Springer; Singapore), 2018.
- 37 O'Connor C and Weatherall J, The misinformation age: how false beliefs spread, (Yale University Press; New Haven), 2019.
- 38 Agosto D E, Information literacy & libraries in the age of fake news, (American Library Association; Chicago), 2018.
- 39 Revez J and Corujo L, Librarians against fake news: A systematic literature review of library practices (Jan. 2018–Sept. 2020). *The Journal of Academic Librarianship*, 47 (2), (2021).
- 40 Santaella L, A pós-verdade é verdadeira ou falsa?, (Estação das Letras e Cores; Barueri), 2019.
- 41 Noble S U, Algorithms of oppression: how search engines reinforce racism, (New York University Press; New York), 2018.
- 42 Casara R, A era pós-democrática, (Exclamação; Porto), 2019.