



Information reification: fake news about Covid-19 on the website of the Brazilian Department of Health

Reificação da informação: fake news sobre Covid-19 no site do Ministério da Saúde do Brasil

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ABSTRACT: This study analyzes fake news published on the website of the Brazilian Department of Health about COVID-19 in 2020. It argues that different forms of disinformation were constituted into reified communicative processes. The study emphasizes the emergence of a disinformation production circuit whose logic is the trivialization of informational practices manifested through fake news. The methodology applied here is of an exploratory-descriptive work with a qualitative approach and content analysis. The analyses prompted the emergence of six categories obtained *a posteriori*: main theme, language, elements that make up the news, rhetorical devices, devices for attributing credibility to the news, and fact-checking procedures. It can be affirmed that the news articles found are based on instrumental compositions that articulate themes related to the pandemic in a simplistic way, with language that disregards grammar norms, and resorting to the combined use of several elements, specially through text and image, and of different rhetorical devices – with the recurrent use of authorities to attribute credibility to the news, and the presence of inconsistencies in fact-checking procedures by Department of Health. Finally, it can be affirmed that the fact-checking carried out by the Brazilian Department of Health had as reference the politicization of the disease in face of the tension between science, politics and the market, which compromises the fight against this health crisis and corroborates the instrumental logic of the information circulating on the web.

Keywords: Reification; Disinformation; Fake news; Fake science; COVID-19.

RESUMO: Analisa *fake news* publicadas no site do Ministério da Saúde do Brasil sobre COVID-19 em 2020. Defende que distintas formas de desinformação se constituíram em processos comunicativos reificados. Destaca o surgimento de um circuito de produtividade de desinformação, tendo por lógica a banalização de práticas informacionais manifestadas através de notícias falsas. Metodologicamente caracteriza-se como uma pesquisa exploratório-descritiva de abordagem qualitativa a partir da análise de conteúdo. As análises permitiram a emergência de seis categorias obtidas *a posteriori*: temática principal, linguagem adotada, elementos de composição da notícia, artifícios retóricos, artifícios de atribuição de credibilidade à notícia e procedimento de checagem da notícia. É possível afirmar que se pautam em composições instrumentais que articulam temáticas relacionadas à pandemia, através do uso de uma linguagem que desconsidera as formalidades das normas gramaticais, apelando ao uso combinado de diversos elementos, principalmente através do uso de texto e imagem; segundo artifícios retóricos diversos, uso recorrente de autoridades às notícias como artifícios de atribuição de credibilidade e permeado de incongruências na fundamentação da checagem das fake news pelo Ministério da Saúde. Por fim, foi possível afirmar que estas checagens tiveram como referência, a politização da doença face ao tensionamento entre ciência, política e mercado, comprometendo o combate à crise sanitária e corroborando a lógica instrumental das informações que circulam na web.

Palavras-chave: Reificação; Desinformação; *Fake news*; *Fake science*; COVID-19.

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Recebido em/Received: 22/02/2022; Aprovado em/Approved: 16/05/2022.

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INTRODUCTION

Fetishism, both in relation to information and to the networks arising from it, has its bases sustained on interpretations that bring together empirical and theoretical perspectives, conceiving them as the center of superstructural changes in cognitive capitalism (Castells 2000; Chesnais 2003; Fuchs 2011). Conceiving information as a core category that builds social relations and practices implies recognizing the rearrangements in the information production circuits. This because in the Antropocene, rearticulations in the processes of production of about science are evidenced.

These changes arising and materialized in digital platforms on the web allowed the expansion and deconstruction of boundaries between the production, consumption, use, and sharing¹ of information (Keen 2009), as well as the trivialization of the forms of information manipulation (Hopf *et al.* 2019).

New informational practices were evidenced, among them the production of disinformation. This specific type of informational product, characterized by the misuse of biased information, became a common practice in the midst of the COVID 19 pandemic, consecrated according to strategies that lend themselves to the interests of groups of different ideologies. Through these strategies, which are the result of both chance and intention, communication processes seek to incite and compose collective imaginations about the disease and the pandemic.

Regarding the subject of this study, we argue that we are facing a pauperization of how we inform and communicate, linked to a number of interests that unveil power relations at different levels and social actors – the result of a tension between science, politics, and the market. These processes take place in the scope of individuals, institutions, communities, and of the State itself.

This study approaches informational practices, arguing the premise that the ways in which we “*act communicatively*” (Habermas 2012) are being shaped by an instrumental logic that establishes the makings of an atmosphere in which the capacities of understanding are compromised. This is due to a disinformation production circuit that has incited a redoubled care in relation to the need to deconstruct processes based on biased information, in contrast to their reliability and quality.

We accredit that to the fact that the capitalist dynamics have expanded and started to influence the social practices of production, consumption, use, and sharing of information. To discuss aspects that underlie that circuit, this study presents its interpretation of the term disinformation, understanding it as a practice that stems from the sophistication of the relations of cognitive capitalism, in light of the concept of reification.

¹ Although these are enshrined as central terms to the studies of informational behavior and underly the analyses, the theoretical discussion will not take place around them.

This study analyzes a specific set of disinformation: the fake news made available and fact-checked on the website of the Brazilian Department of Health. In relation to the misuse of information surrounding science, we propose discussions that bring together the expressions fake news (Wardle 2017), fake science (Spira 2018; Hopf *et al.* 2019; Ho, Goh, Leung 2020; Oliveira, Martins Toth 2020), fake science news (Ho, Goh, Leung 2020) and fact-checking (Mena 2020).

With that in mind, in the subsequent section the theoretical approximations that encompass subjects related to the disinformation context on COVID-19 will be addressed.

REIFIED INFORMATIONAL PRACTICES AND COMMUNICATION PROCESSES

As mentioned above, information production circuits have undergone changes due to the possibilities of disinformation production and sharing on the web. These changes have resulted in unusual informational practices. In that sense, we adopt the notion proposed by Savolainen (2008), who sees informational practices as mechanisms that individuals use to promote their daily endeavors, essentially based on their stocks of knowledge as a starting point for producing and sharing information. Investigations have been raised that reveal inconsistencies in these communication processes and in the social consequences arising from them.

Currently, the ways in which we produce and share information give ammunition to predatory informational practices, understood as disinformation. The concept of disinformation has become a research theme that is widely discussed by authors from different areas of knowledge (Fallis 2015; Wardle, Derakhshan 2017; Wardle 2017, 2019; Conde 2018; Gupta *et al.* 2020).

We emphasize the duality of the notion of disinformation proposed by Wardle (2017), who argues for its complexity, given that she understands it as mistaken information (misinformation – the unintentional sharing of false information) and as disinformation (the deliberate creation and sharing of information known as false).

Based on this duality, we adopt for this study the concept of disinformation as informational practices that have dishonest intentions and the objective of confusing the citizen. We argue that such phenomena are consolidated from the adoption of instrumental logics that reify both the information and the communication processes in which they are identified.

The reification of information is based on the distortion of the ways in which we communicate, and its centrality “[...] contains in itself a rich potential for diagnosing social pathologies present in contemporary societies.” (Melo 2020, p.31).

We argue that information reification also consists of relativizing the boundaries between informing and disinforming, considering the pauperization of the forms of argumentative composition, the impoverishment of message presentation, and the possibilities for checking and validating information.

Another cleavage in the phenomenon demonstrates that information is reified into disinformation because the ends become the main objective of the informational practice. As we are talking about the sharing of information according to intentions that precede it, its quality and, thus, the limits of the truth are compromised.

It doesn't matter that outright falsehoods are publicized, what matters is that they appear plausible. Thus, falsehood, falsification, which has the omnipresence that technology provides, contaminates all spheres of our lives: communication, politics, economics, thought, decisions, and even our private lives. And when falsehood becomes more subtle, more complex, created with a tactical intent, it responds to a strategy and pursues goals, that's when we can talk about disinformation. (Olmo y Romero 2019, our translation).

Another noteworthy aspect is that disinformation leads to the development of informational practices that have disinformation at their center, which requires that information producers and consumers check the content of the messages. We also emphasize that disinformation is not limited to the dichotomy of disseminating truth or lies.

Furthermore, currently, messages that aim to trivialize the dimension and the effects of COVID-19 are being shared based on different strategies, using content, arguments, language, and transforming the emancipatory intention, characteristic of the communicative process, into simple commodity. "Based on the 'commodity fetishism', this reveals the logic and the central and structural problems of this society in all its vital manifestations." (Teixeira 2013, p. 3).

When authors of posts, entries, videos, stories, simple electronic messages via WhatsApp or e-mails, or articles in any other format are present on Facebook, Twitter, or other social media, they move away from the professional and editorial standard, they transform the truth into commodity to be manipulated at the expense of liability [...]. (Targino, Cavalcante 2020, p. 39).

This transformation implies empirical changes and a resizing in the theoretical-conceptual field. The decentralization from information to disinformation does not happen only in relation to the naturalization of informational practices, but mainly affects the possibility of perception of different social actors around the binomial information-truth, compromising the interpretation of facts that occur in society.

Another characteristic of the process of reification of disinformation is related to the excess of information, catalyzed by superstructural and conjunctural aspects, which Wardle (2017) has called hyperinformation. As a synonym originated from the COVID-19 pandemic context, the term infodemic was coined by the World Health Organization (WHO) in the beginning of the health crisis to characterize the massive sharing of information produced about COVID-19, which makes it difficult to find reputable sources and trustworthy guidance about the disease. This indiscriminate production of information generates an environment of uncertainty, and favors the production of even more disinformation (Organização Pan-Americana de Saúde 2020).

Among the different forms of disinformation, fake news deserves special attention in this study. Wardle (2017) is categorical in stating that the term is characterized by an intrinsic complexity, given that it does not only cover news, but an ecosystem of information. We recognize this complexity in the arguments used by the author, understanding fake news as a specific type of disinformation, composed of false content used to attract the attention of the reader, with the intention of disinforming them and obtaining some kind of benefit.

In the context of this study, a no less important aspect related to fake news, is fake science. Even though this phenomenon was not structured from the pandemic, it has gained a new look and dimension when we consider the rationale that guides the composition of fake news involving matters related to the pandemic and COVID-19. According to Greg (2017), fake science can arise from scientific fraud or from the politicization of science. Both factors harm science and how its integrity is viewed by society, and can be seen in news about the pandemic context and about the disease.

Several authors (Spira 2018; Hopf *et al.* 2019; Ho, Goh, Leung 2020; Oliveira, Martins, Toth 2020) understand fake science as a process that appropriates the scientific discourse to disseminate information with the intention of meeting a range of interests (commercial, political, legal, of advertising, etc.).

To Ho, Goh and Leung (2020), news based on fake science are a type of fake news that can threaten scientific credibility. Hopf *et al.* (2019) share that understanding when they mention that the cycle fake news/fake science undermines individuals and society's capability to choose based on evidence.

Given the evidence of such incapability, efforts are made toward creating strategies that can fight disinformation. Fact-checking becomes, thus, an informational practice of resistance in the face of disinformation, as it is an alternative for news verification and clarification. To Mena (2020) fact-checking consists of analyzing news with the intention of attributing labels of credibility or incredibility to them, as a way to discourage people from sharing misleading news in social media. Based on that, we observe the existence of internationally recommended conducts and principles for carrying out news verification practices. Among those practices we emphasize the concern with transparency related to (i) the citation of trustworthy sources; (ii) the disclosure of the adopted methodology so that the reader can retrace the path to check the information; (iii) and the commitment to open and honest rectification.

We stress the fact that different social actors have started to perform these tasks due to the necessity that the trajectories toward validation or invalidation be constructed. And that imports fact and information checking also as a responsibility characteristic of institutions of the State, given the

[...] official (governmental) fight against untruth in the scope of any segment, it is plausible to contribute to the formation of a community that is more enlightened, fairer, less tolerant and less solidary to impostors and lies. (Targino, Cavalcante 2020, p. 51).

In this study, we aim to understand how the Brazilian government has been dealing with these untruths by taking on the role of demystifying or validating information about COVID-19.

METHODOLOGY

This is an exploratory-descriptive study with a qualitative approach that analyzed news checked by the Brazilian Department of Health and made available on the website Saúde sem Fake News (Health without Fake News). Since 2018 the website has been dedicated to receiving from the population, via WhatsApp, information about health in different media (text, images, videos, etc.) that circulate on social media, so that a technical team in the department can carry out an analysis on the veracity of the content. Since the pandemic, the website started to provide a prominent space to news about COVID-19.

The techniques used in this study were: spontaneous observation (Gil 1999) combined with content analysis (Bardin 2016). It's important to stress that both techniques were realized between April 15 and July 31, 2020.

Due to this combination of methods, the data retrieval, organization, and analysis consisted of complementary phases. The dynamic and methodological decisions performed amidst the exploratory process are detailed in this section.

First, we searched for fake news related to COVID-19 on the web. Among the websites and social media platforms observed, we found the webpage www.saude.gov.br, called "Saúde sem Fake News" (Health without Fake News), which is part of the Brazilian Department of Health's website.

Thus, we decided to consider the news about COVID-19 housed in the department's website from April 2020, understanding the importance of the role of this institution in clarifying and guiding citizens when in the midst of an unprecedented health crisis.

The organization of the data occurred through the composition of a table with the 79 collected news hyperlinks in a text editor software. Subsequently, the images corresponding to each hyperlink were added to the table to facilitate the analysis process. Later, in June, seven more news were added, the last one being from June 6, 2020.

As a result of such decisions and circumstances, the corpus consisted of 86 news articles published on the Department of Health's website between the months of January and June 2020.

Next in the process, we took notes to build up a memorandum of our first impressions of the news articles and of the fact-checking procedures performed by the department.

From this “*surface reading*” (Bardin 2016), a spreadsheet was created in the software Excel 2013 to allow the detailing of the analyses in relation to the peculiarities and common characteristics found in the news that composed the corpus.

As a result of the analysis processes and of the rereading of the memorandum, we established categories that emerged from the phenomenon *a posteriori* and that are listed in Table 1. The categorization criterion used was semantic (Bardin 2016), that is, thematic categories were created based on the explicit content identified in each news item.

Table 1. Categories that emerged from the news in the corpus.

Categories/Description	Subcategories/Description
<p>1. Main theme</p> <p>(In relation to the subjects identified in the news)</p>	<p>Causes of the disease – News indicating factors supposedly responsible for the origin of the disease.</p> <p>Cure or prevention – News related to the cure or prevention of COVID-19.</p> <p>Impairment or effects – News indicating possible sequelae of the disease.</p> <p>Facts or data – News about events or data related to the pandemic in Brazil and in the world.</p> <p>Risks or forms of contagion – News that point out possible factors or behaviors that cause people to be infected by the virus that causes COVID-19.</p> <p>Statements of the Head of the Department of Health – News about statements given by the authorities of the department concerning the pandemic.</p>
<p>2. Language</p> <p>(How the news is presented)</p>	<p>Formal – Based on the use of expressions in line with grammatical norms.</p> <p>Informal – Based on the use of daily expressions, with no strictness in relation to grammatical norms.</p> <p>Not available – When the news was not made available by the Department of Health.</p> <p>Visual – Based on images, regardless of the adequacy to grammar norms.</p>
<p>3. Elements that make up the news</p> <p>(Media resources that make up the news)</p>	<p>Audio – Audio resource to record, transmit and reproduce a message that can be heard by a person.</p> <p>Emojis – Symbols that represent an emotion, idea, word, or complete sentence. Usually used in instant messages via mobile devices.</p> <p>Image/Photo – Non-verbal signs that use visual components to convey an idea.</p> <p>Link – Address of a website, document (or resource) on the web (Internet).</p> <p>Not available – When the news was not made available by the Department of Health.</p> <p>Text – Set of words that convey an idea.</p> <p>Video – Moving image that can be accompanied by sound and text.</p>

<p>4. Rhetorical devices</p> <p>(How the news arguments are constructed)</p>	<p>Advertising – Uses arguments with the intention to persuade in relation to products or ideas.</p> <p>Alarmist – Explicitly uses arguments that increase the proportion of the news, which can cause fear or disquiet.</p> <p>Journalistic – Uses arguments characteristic of journalistic language.</p> <p>Not identified – When it was not possible to identify the rhetorical device adopted in the news.</p> <p>Reductionist – Explicitly uses resources that minimize or instrumentalize the subject reported.</p> <p>Satiric – Uses humorous and sarcastic arguments with the intention of criticizing customs, institutions, or habits.</p> <p>Sensationalist – Uses resources intended to make an impact, to shock public opinion, and seeks to emphasize the importance or urgency of a news article.</p>
<p>5. Devices to attribute credibility to the news</p> <p>(Relations that seek to validate the content)</p>	<p>Does not apply – When the news article does not mention any form of attributing credibility to itself.</p> <p>Institutional Authority – Mentions of organizations that hold technical, scientific, or political competence. They also include informational sources such as newspapers and journals.</p> <p>Not available – When the news was not made available by the Department of Health.</p> <p>Personal Authority – Mentions of individuals who hold a title that grants them technical or scientific competence.</p>
<p>6. News checking procedure</p> <p>(How the news is composed argumentatively, considering the use of sources, making it possible for the reader to validate the information)</p>	<p>Excluded – When the entire fact-checking content is excluded.</p> <p>Not Substantiated – Composed in an instrumental way, in which the arguments are not conclusive, and when there is no content from additional sources that validate the established argument.</p> <p>Substantiated – Composed by valid arguments through the explicit mention of information sources where additional information can be found, which makes it possible for the reader to reach the same conclusion of whether the news is true or false.</p>

Source: The authors.

DATA ANALYSIS

In this section we list the interpretations, descriptions and analyses performed during the study in relation to the news made available on the Brazilian Department of Health's website Saúde sem Fake News from January to June 2020.

The analyses that emerged from the convergence between the spontaneous observation, the creation of the memorandum, and content analysis, present the categorization of data and information, allowing the observation of contradictions that corroborate that fake news and its fact-checking are based on instrumentalized information and informational practices.

We emphasize that the analyses are intentionally presented transversally, converging the manifestations between the categories found in fake news (disinformation) so that we can demonstrate the instrumental rationality present in the news, guided by the impoverishment and intentions present in how the news is composed.

The categorization of the **main theme** that emerged from the analysis of the corpus is presented in Table 2. We describe below the emphases evidenced according to the pre-analysis and to the repeated readings and interpretations of the information.

Table 2. Distribution of the news themes.

Main theme	Amount of news	Percentage
Cure or prevention	41	47.86%
Data about the pandemic	21	24.41%
Risks or forms of contagion	12	13.95%
Causes of COVID-19	5	5.81%
Statements of the Head of the Department of Health	4	4.65%
Impairment or effects of the disease	3	3.48%

Source: The authors.

The data presented make it possible for us to affirm that there is a predominance of news related to the cure or prevention of COVID-19. However, when we analyze the content of this category, we can see the following specific subjects: intake of various beverages, especially teas, and consumption of immunological substances. What can be evidenced is that there is mention of several products and substances that theoretically simplify the possibility of cure through alternative, homemade recipes, and even combined with chemical products.

An example can be seen in the news presented in Figure 1, which shows not only the aspects mentioned, but other peculiarities that characterize elements that constitute disinformation processes.

Figure 1. Fake news whose theme is the cure or prevention of COVID-19².



Source: Research data.

It is possible to identify that the image arranges the ingredients that make up the supposed tea strategically, together with the text about those ingredients and their preparation. The fact that elements characteristic of a popular recipe are combined with ingredients presented according to an apparent scientific language is noteworthy. Furthermore, a logic similar to the medical guidelines can be identified when the news prescribes how to take the tea and procedures that should be avoided when ingesting it, also explicitly presenting the title and name of a doctor at the end. In this case, the tea leads to a simplistic projection in relation to the possible cure for the disease, demonstrating the instrumental rationality adopted.

In relation to the **language adopted**, the occurrences are listed as follows: 55 (63.95%) news pieces in which informal language was used; 11 (12.79%) that presented formal language; 10 (11.62%) that were not available for analysis; and eight (9.3%) news articles in which only visual language was used. We emphasize that, among the 10 news pieces that were not available, we identified a pattern in relation to the suppression of certain images, indicating a lack of concern when it comes to the clarification of information, compromising the reader's understanding. The news "Sopa de morcego e o

² "Tea for the immunization against the Coronavirus. Ingredients: 3 slices of ginger; 1 clove of garlic (crushed); 1 dessert spoon of dried lemongrass leaves; 1 tablespoon of fresh thyme leaves; 1 dessert spoon of dried mint leaves; 1 cup of tea of alkaline water pH 10.55; ½ a lemon peel. How to prepare and take: Pour boiling water over the dried and fresh plants. Cover the solution and let it rest for 5-15 minutes. Strain it and drink it. Add 30 drops of green propolis to the cup of tea when you wake up and before bed. Avoid white sugar, milk and dairy in general, soda, and ice cream to better boost the preventive effect against the Coronavirus" (our translation).

coronavírus”³ (Figure 2) is noteworthy. In it we can see a disrespect for grammar norms, guided by an informal use of language, which composes the category with the highest number of occurrences among those analyzed.

Figure 2. Fake news that takes a picture out of its context⁴.



Source: Research data.

We also emphasize that the text and the image combined disregard the formalities of the grammar norms, such as punctuation and the use of words written in capital letters. Furthermore, this news employs vulgar words, slang and expressions that are offensive toward Chinese people, such as when it says “QUE POVO MALUCO” (what a crazy people), a xenophobic manifestation. These expressions are connected to elements present in a dispute that characterizes the polarization between the understandings on the Coronavirus in Brazil.

In the category **elements that make up the news**, related to the media used in the message, the analyses allow us to affirm that there is a predominance of text – present in 66 (76.74%) news articles – and images – present in 18 (20.93%) news articles, considering in that amount both the individual and combined occurrences of all elements. The distribution of elements was found as follows: 32 (37.20%) news articles that used only text, followed by 14 (16.27%) that combined text and image; 10 (11.62%) items in the corpus whose elements we were not able to observe because the news image was not made available on the website; seven (8.13%) news articles that combined text and emojis in their content; five (5.81%) that used videos; four (4.65%) that combined text and audio media; four (4,65%) that used both text and links; four

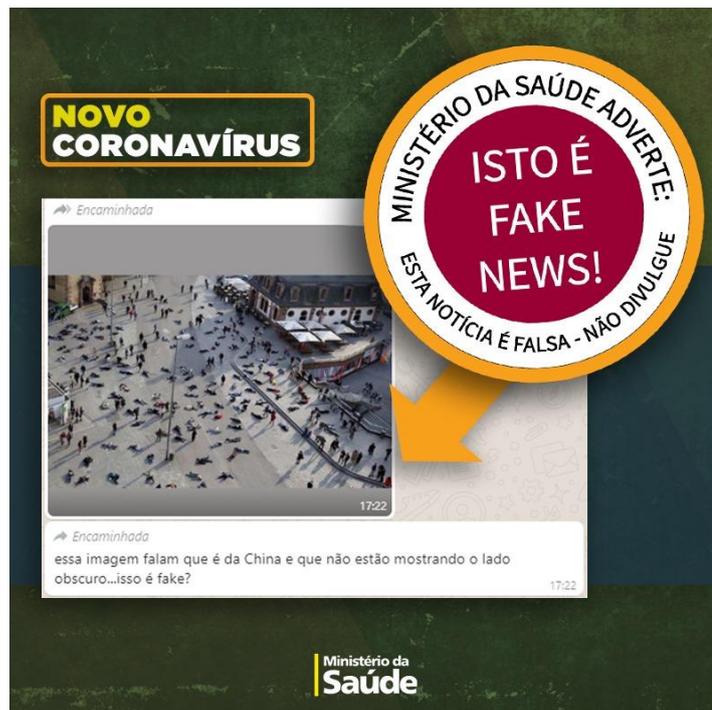
³ “Bat soup and the coronavirus” (our translation).

⁴ “HELP ME DUDE! Bat soup may have disseminated coronavirus in China [paragraph break] In the preparation of the soup, the bat is cooked whole, with its belly cut open. AMONG OTHER STUFF THEY EAT. WHAT A CRAZY PEOPLE” (our translation).

(4.65%) that used image and audio; two (2.32%) news articles that used text, emoji, and video; two (2.32%) that used text, emoji, and links; one (1.16%) that used only audio; one (1.16%) with audio and video; and one (1.16%) with text and video.

Although the data indicate the predominance of text, a news article that made use of the combination of text and image is worth mention, as shown in Figure 3.

Figure 3. Fake news article that uses a photo out of context⁵.



Source: Research data.

The elements that make up this news piece are also used strategically, given that the combination of text and image is guided by two aspects: the small amount of text, and the use of an image that does not correspond to reality. It is a montage with a real photography realized with artistic purpose, but intentionally used out of context to make up a fake news article, as we can see in the text made available by the Department of Health: “The photography does not depict a real event in China. It is actually a photographic register made in Frankfurt, Germany, in 2014, of an artistic project to pay homage to the 528 victims of the Nazi concentration camp ‘Katzbach’”. (Brasil 2020a, our translation).

Hopf et al. (2019, p. 3) have written about that practice:

The manipulation of data by anyone (including scientists) becomes ever easier. Due to the ready availability of information and communication technology (ICT) tools and access to the Internet and social media, there now exist countless ways to create and

⁵ “this image they say it’s of China and that they’re showing its dark side... is it fake?” (our translation).

distribute products of unknown veracity, including manipulated textual and pictorial material.

Another aspect that deserves attention is that this news uses two rhetorical devices, alarmism and sensationalism, given the content of the image, which shows a number of people lying on the ground. The news seems to try to make itself look like a message shared through WhatsApp, in an effort to induce the reader to trust its content due to their trust in their own personal contacts in that application, but with no means to identify the information source or authorship.

In relation to the category **rhetorical devices**, we found the following distribution: 32 (37.20%) occurrences of news pieces that used alarmist devices; 29 (33.72%) that used reductionist devices; 10 (11.62%) used sensationalist devices; we were not able to identify the rhetorical device used in eight (9.30%) news pieces; two (2.32%) used journalistic devices; two (2.32%) used advertising devices; one news (1.16%) used a combination of sensationalism and alarmism; and, finally, one news article (1.16%) used satiric devices.

In Figure 4 we can see the evident use of alarmism as a rhetorical device, even though only a fragment of the news' text appears, given that there is the expression “Keep reading”, giving the impression that it is indicating a hyperlink to access more content.

Figure 4. Fake news that used alarmist rhetorical devices.



Source: Research data.

⁶ “It’s the End of the World!!! China seeks approval of the court to kill over 20,000 patients infected with coronavirus to avoid the dissemination of the virus [paragraph break] the highest court in Chhina, the Supreme People’s Court, must approve on Friday the mass killing of patients that tested positive for Coronavirus in China... Keep reading” (our translation).

An alarmist device is used at the beginning of this news article, when it mentions that “*Isto é o Fim do Mundo*” (It’s the End of the World), followed by the indication of a significant number of people who would have their lives excised by an alleged decision of the Chinese government. Those elements brought together can provoke fear and disquiet, something that is characteristic of when alarmism is used to report a fact. In addition, we can observe the use of informal language, given the presence of grammar mistakes and the lack of capital letters. There are also orthographic mistakes, which shows a lack of care when preparing the text in contrast with the seriousness that the subject would require were it related to a real event. Furthermore, the text credits the decision-making power over the genocidal act to the Supreme Court, which is the highest instance of the Judicial Power of a State.

In relation to the category **devices to attribute credibility to the news**, among the 86 news articles in the corpus, 46 were found (53.48%) in which there are mentions to institutional or personal authorities; 30 (34.88%) did not mention authorities; and 10 (11.62%) were not available for analysis, given that the verification path traced by the Brazilian Department of Health was not made available to the reader.

Among the 46 news articles that mentioned authorities, 20 referred only to an institutional authority; seven made reference only to a personal authority; and 19 combined personal and institutional authorities in different ways. Among those combinations, we identified 53 mentions of institutional authorities and 20 of personal authorities.

In our understanding, the great incidence of these devices in news pieces is a way found by those who disseminate disinformation to convey technical or scientific credibility to information. In that sense, when it comes to institutional authorities, there are mentions of governmental, state, professional, educational, and health institutions, as well as of information sources such as newspapers, websites and scientific journals. Regarding personal authorities, there is the recurrent mention of titles such as doctor, Ph.D., hospital director, researcher, specialist, medical student, epidemiologist, virologist. Thus, these examples trigger elements of scientific signs, such as lab coats, test tubes, academic terms, and reinforcement through the qualification of those who produce the content as a way to validate their arguments.

Two fake news that made use of scientific sources deserve mention. One of them is titled “*Pesquisa publicada por cientistas chineses diz que coronavírus tornará a maioria dos pacientes do sexo masculino infértil*”⁷. As we can see in Figure 5, in addition to that title being alarmist, it aesthetically incites the reader to think that it is talking about a scientific journal. The Department of Health considered the news to be fake because, though the study is real, it is a pre-publication that has not yet been peer reviewed.

⁷ “Research published by Chinese scientists says that the Coronavirus will make most male patients infertile” (our translation).

Figure 5. Fake news article that uses publication not yet peer reviewed.

CORONAVÍRUS

MINISTÉRIO DA SAÚDE ADVERTE: ISTO É FAKE NEWS! ESTA NOTÍCIA É FALSA - NÃO DIVULQUE

Pesquisa publicada por cientistas chineses diz que coronavírus tornará a maioria dos pacientes do sexo masculino infértil

Por que é falso?

O artigo citado está em fase de pré-publicação e não foi revisado pelos pares, portanto tem pouco valor científico no momento. Esse artigo traz dados preliminares sobre a possibilidade de infecção de células do testículo pelo SARS-CoV-2 porém menciona que não existem dados suficientes para se estabelecer um risco de esterilidade.

Outros vírus são capazes de infectar essas células e causar inflamação nos testículos, como o vírus da caxumba por exemplo, no entanto na grande maioria dos casos essa infecção não leva a esterilidade. Desta forma nesse momento não podemos afirmar qualquer correlação do SARS-CoV-2 com esterilidade.

Não há comprovação científica da relação causal entre a infertilidade e a infecção pelo coronavírus.

Saúde **sem** Fake News
(61) 99289-4640
www.saude.gov.br/fakenews

Ministério da **Saúde**

Source: Research data.

Another news article that deserves mention is displayed in Figure 6 and was titled “Vacina contra a gripe aumenta o risco de complicações relacionadas ao Coronavírus em 36%”⁸.

Figure 6. Fake news uses scientific source published before the pandemic.

CORONAVÍRUS

MINISTÉRIO DA SAÚDE ADVERTE: ISTO É FAKE NEWS! ESTA NOTÍCIA É FALSA - NÃO DIVULQUE

Influenza vaccination and respiratory virus interference among Department of Defense personnel during the 2017-2018 influenza season. - PubMed - NCBI

Vacina contra a gripe aumenta o risco de complicações relacionadas ao Coronavírus em 36%

Resumo : tomar vacina agora pode Aumentar em 36% ambiente pra covid19

https://www.ncbi.nlm.nih.gov/pubmed/31607599

Por que é falso?

Não existem estudos que correlacionam a vacina da influenza com o risco de adoecimento ou complicações pelo Covid-19.

Saúde **sem** Fake News
(61) 99289-4640
www.saude.gov.br/fakenews

Ministério da **Saúde**

Source: Research data.

⁸ “Vaccine against the flu heightens the risk of complications related to the Coronavirus in 36%” (our translation).

The text, also in an alarmist tone, mentions as its source an article published with a title in English, together with a link to the database Pubmed. Although the source mentioned is true and the article real, the Department of Health labeled the news as fake news, given that

There are no studies relating influenza vaccination and the risk of illness or complications from Covid-19. The article mentioned is from 2017(?), prior to the emergence of Covid-19, which is a disease first registered in December 2019. Furthermore, the objective of the article was not to assess the risk of complications from coronavirus combined with the influenza vaccination, neither is that the conclusion reached by the authors (Brasil 2020b).

The materialization of what Ho, Goh and Leung (2020) mention as “fake science news” can be observed in Figures 5 and 6. In other words, those are news articles that use scientific sources to validate fake information, so that they can attribute a supposed credibility to the news based on society’s perception of scientific or institutional authorities, reinforcing the idea that disinformation articulates characteristic elements of scientific communication processes and products.

In relation to the category **news checking procedure**, we can observe that the strategy adopted by the Department of Health, after assessing a news article, was to publish in their website the image of the content forwarded by citizens via application, together with the presentation of arguments that justify the conclusion on whether the news is true or false. From the 86 news articles selected for this study, 81 were labeled as fake news, and five were found true.

As a criterion for categorizing the analyzed corpus, we mainly observed if there was citation of sources and if arguments were presented that would lead the reader to reach the same conclusion indicated by the Department of Health. However, beyond the analyzed criteria, we observed some inconsistencies that compromise the citizen’s understanding in case they really want to make sure that the news is true or false, such as: (i) broken links; (ii) presentation of links that do not direct the reader to a clear and concise answer, but to a webpage of the department that addresses several subjects related to health, forcing the reader to search for the information they seek; (iii) shallow answers related to facts or data that would require a more detailed and explanatory writing.

Based on that, in our analysis, 52 (60.46%) news articles were found that did not have their checking substantiated; 33 (38.37%) whose checking was substantiated; and one (1.16%) whose checking we were not able to assess because it had been excluded from the website (Figure 7).

Such news article was classified as fake news by the department and published under the title “*Cloroquina e hidroxiclороquina passarão a ser usadas no Brasil para combater*

coronavírus”⁹. It was selected for our study in April, and was later excluded from the website’s news list. We emphasize that this event was mentioned in the magazine *Época*, which mentions the intentional exclusion of this news article from the department's website, stressing that moments before carrying out this suppression the federal government announced its position regarding the expansion of the possibility of using the substance against COVID- 19. (Amado 2020).

Figura 7. News article excluded from the Brazilian Department of Health’s website¹⁰



Source: Research data.

The exclusion of information supposedly not intentionally, as was the case of the 10 news articles with no images, or with the deliberate intention of not making the content available, as was the case of the exclusion of the news piece about chloroquine, evidences the government’s lack of transparency, and that compromises the whole fact-checking and information verification process proposed by the website. Thus, citizens are kept from understanding the context of the events, as well as from comparing news articles received through social media with news checked by the department.

In many arguments used to substantiate the classification of a news piece as true or not, the texts created by the Department of Health were based only on the textual composition written by the technical team, without making the access to documents, protocols, or procedures that can support the presented argument available to the

⁹ “Chloroquine and hydroxychloroquine are now being used in Brazil to fight the coronavirus” (our translation).

¹⁰ “The American government has just announced that it finished testing 40 people infected with COVID-19 who received hydroxychloroquine combined with azithromycin. Results are striking, 100% of the 40 volunteers were cured within 72 hours. The American president has ordered Bayer to produce the drug on a large scale to meet the national demand as well as that of allied countries, among them Brazil. In Brazil, some hospitals, such as Prevent Senior, are already using the drug with excellent results, including for the elderly” (our translation).

reader. And beyond that, when there is indication of a complementary source, there are broken links that hinder the access to correct, trustworthy information.

This set of aspects that were verified in the categories that emerged from the analysis leads us to reflect on how often citizens end up receiving inconsistent information from the Brazilian Department of Health. Thus, the practices of that body may contribute to the disinformation process, and they show bias, characteristic of the political polarization and a result of interests that go against scientific knowledge, a rationality that is integrated into the current government's perspective.

FINAL CONSIDERATIONS

This research sought to understand the phenomenon of disinformation on the COVID-19 pandemic. To carry out the study, we used an exploratory-descriptive process, spontaneously observing information made available on the web, together with the content analysis technique.

To elucidate such processes, we started from the premise that a different logic was instituted in information society. With the concept of reification in mind, we argue that not only information is reified, becoming a mere commodity, but specially disinformation does so too, due to instrumental rationalities that guide this new product of cognitive capitalism, compromising communication processes.

Impoverished information is transmuted into disinformation due to the overvaluation and exacerbated production of biased information in the midst of a pandemic (infodemic). This circuit of disinformation production is also materialized because the news is characterized by the pauperization of processes, content, arguments, form; aiming to make diffuse the understandings of social actors.

We argue that this production of disinformation is consecrated through different informational practices which seek to attribute to information the character of commodity (reification).

In that sense, we see the importance of relating the notions of disinformation, fake science, fake news, and fact-checking, for these concepts converge when it comes to interpreting the phenomenon here analyzed.

Such informational practices are characterized by the trivialization of communicative actions due to the adoption of a logic centered in the instrumentalization of information production, use, and sharing, with the objective of confusing the citizen. That happens due to the overvaluation of disinformation, which results from the incorporation of a rationality in which the exacerbated production of information and the shift from the core of communicative processes toward checking the quality and validity of published information have become the core of this dynamic.

The analyses of news articles about fake news allowed us to identify six categories, namely: main theme, language, elements that make up the news, rhetorical devices, devices to attribute credibility to the news, and fact-checking procedures.

Next, we presented the categories obtained from the analyzed corpus, which showed how reification processes take place in the news pieces, considering the intersectionalities between categories. The analyses evidenced a lack of care in the composition and content of fake news, which indicates that reification is evidenced in disinformation processes, taking form from the combining of the obtained categories.

The themes were put forward based on simplistic, reductionist relations that mention alternative, homemade treatments, declarations made by the Head of the Department of Health, the use and quality of products, data on the pandemic, the origin of the pandemic, among others. The language adopted in the fake news articles mostly disregards the formalities of grammar norms, opting for vulgar terms and combining the text with several media resources, such as images, emojis, and audio. The use of the rhetorical devices sensationalism and alarmism is noteworthy, employed to indicate the urgency of the content, to provoke fear, disquiet, and to shock public opinion. Added to that, the news resorted to the recurrent mention of institutional and personal authorities; as well as to crude tricks when citing scientific sources with the intention of attributing to the news academic credibility. In relation to the last category, we identified the prominence of unsubstantiated fact-checking, based on a generalized lack of concern and presenting inconsistent links, argumentative simplifications in relation to facts and data, and the suppression of information.

Finally, based on the observation of the phenomenon, we emphasize peculiarities that reveal that the Brazilian Department of Health – in addition to its greater function as a State body, which “[...] *creates public plans and policies aimed to the promotion, prevention, and assistance in the health of Brazilians.*” (Brasil 2020c, our translation) – has been promoting the politicization of this disease by putting on the agenda a tensioning between science, politics, and the market, compromising the fight against this health crisis and corroborating the market logics that promote the dissemination of disinformation on the web.

REFERENCES

AMADO, Guilherme, 2020. Ministério da saúde apaga do site reportagem que chamava tratamento via cloroquina de “fake news.” *Época* [online]. 20 June 2020. [Accessed 12 June 2020]. Available from: <https://epoca.globo.com/guilherme-amado/ministerio-da-saude-apaga-do-site-reportagem-que-chamava-tratamento-via-cloroquina-de-fake-news-24437247>

BARDIN, L., 2016. *Análise de conteúdo*. São Paulo: Martins Fontes.

BRASIL. Ministério da Saúde, 2020a. Foto da China e o novo coronavírus - É FAKE NEWS! Brasília: Ministério da Saúde [online]. 29 January 2020a. [Accessed 29 October 2021]. Available from: <https://www->

hmg.saude.gov.br/component/content/article/1361-fake-news/46242-foto-da-china-e-o-novo-coronavirus-e-fake-news.

BRASIL. Ministério da Saúde, 2020c. Institucional. Brasília: Ministério da Saúde [online]. 2020. [Accessed 29 October 2021]. Available from: <https://www.gov.br/saude/pt-br/aceso-a-informacao/institucional>.

BRASIL. Ministério da Saúde, 2020b. Vacina da gripe aumenta risco de adoecer por coronavírus é fake news. Brasília: Ministério da Saúde [online]. 28 May 2020b. [Accessed 29 October 2021]. Available from: <https://antigo.saude.gov.br/fakenews/46967-vacina-da-gripe-aumenta-risco-de-adoecer-por-coronavirus-e-fake-news>.

CASTELLS, Manuel, 2020. A era da informação: economia, sociedade e cultura. Em: A Sociedade em rede. São Paulo: Paz e Terra.

CHESNAIS, François *et al.*, 2003. Uma nova fase do capitalismo? São Paulo: Xamã.

CONDE, Cesar Augusto Galvão Fernandes, 2018. Desinformação: qualidade da desinformação compartilhada em mídias sociais. [online] Thesis (Master in Information Science) Programa de Pós-Graduação em Ciência da Informação, Universidade Estadual de Londrina, Paraná. [Accessed 17 June 2020]. Available from: <http://www.bibliotecadigital.uel.br/document/?code=vtlso00218522>.

FALLIS, D. What is disinformation?, 2015. Library Trends. 2015. vol. 63, no. 3, p. 401-426.

FLORIDI, Luciano, 1996. Brave.Net.World: the Internet as a disinformation superhighway? The Electronic Library. October 1996. vol., 14, no. 5.

FUCHS, Christian, 2011. Cognitive capitalism or informational capitalism? the role of class in the information economy. In: PETERS, Michael; BULUT, Ergin (Eds.) Cognitive capitalism, education and digital labor. New York: Peter Lang. p. 75-119.

GIL, Antonio Carlos, 1999. Métodos e técnicas de pesquisa social. São Paulo: Atlas

GRECH, V., 2017. Fake news and post-truth pronouncements in general and in early human development. Early Hum. Dev. 2017. no. 115, 118-20.

GUPTA, L. *et al.*, 2020. Information and Misinformation on COVID-19: a Cross-Sectional Survey Study. Journal of Korean Medical Science. 2020.

HABERMAS, Jürgen, 2012. Teoria do Agir Comunicativo. São Paulo: Martins Fontes.

HO, S.S, GOH, T.J and LEUNG, Y.W, 2020. Let's nab fake science news: predicting scientists' support for interventions using the influence of presumed media influence model. Journalism [online]. 30 June 2020. [Accessed 5 August 2020]. Available from: <https://journals.sagepub.com/doi/full/10.1177/1464884920937488>

HOPF, Henning *et al*, 2019. Fake science and the knowledge crisis: ignorance can be fatal. Royal Society Open Science. 2019. vol. 6, no. 5.

KEEN, A, 2009. O culto do amador: como blogs, myspace, you tube e a pirataria digital estão destruindo nossa economia, cultura e valores. Rio de Janeiro, ZAHAR.

MELO, R., 2010. Reificação e reconhecimento: um estudo a partir da teoria crítica da sociedade de axel honneth. *Ethic@*. 2010. vol. 9, no. 2, p. 223-227.

MENA, P., 2020. Cleaning up social media: the effect of warning labels on likelihood of sharing false news on facebook. *Policy and Internet*. 2020. vol. 12, no. 2, p. 165-183.

OLIVEIRA, T., QUINAN, R. and TOTH, J., 2020. Antivacina, fosfoetanolamina e Mineral Miracle Solution (MMS): mapeamento de fake sciences ligadas à saúde no Facebook. *Revista Eletrônica de Comunicação, Informação e Inovação em Saúde*. 2020. vol. 14, no.1.

OLMO Y ROMERO, Julia Alicia, 2019. Desinformacion: conceptos y perspectivas. Real Instituto Elcano, Madrid.

ORGANIZAÇÃO PAN-AMERICANA DA SAÚDE, 2020. Entenda a infodemia e a desinformação na luta contra a covid-19 [online]. [S.l.]: OPAS/OMS. [Accessed 19 June 2020]. Available from: https://iris.paho.org/bitstream/handle/10665.2/52054/Factsheet-Infodemic_por.pdf?sequence=14.

SAVOLAINEN, R., 2008. Everyday information practices: a social phenomenological perspective. Plymouth: Scarecrow.

SPIRA, Beny, 2018. Por que tanta implicância com pseudociências? *Revista Questão de Ciência* [online]. 2018. [Accessed 19 June 2020]. Available from: <https://www.revistaquestaodeciencia.com.br/index.php/artigo/2018/11/13/por-que-tanta-implicancia-com-pseudociencias>.

TARGINO, Maria das Graças and CAVALCANTE, Anderson Victor Barbosa, 2020. Admirável mundo novo da ética da informação 2.0 em tempos de fake news. *Informação em Pauta*, 2020. vol. 5, no. 1, p. 33-53.

TEIXEIRA, Luanna Carvalho Miranda, 2013. As novas tecnologias da informação e comunicação e o processo de reificação e de dominação. *In: Jornada Internacional de Políticas Públicas* [online]. São Luís: UFMA. 2013. [Accessed 22 May 2020]. Available from: <http://www.joinpp.ufma.br/jornadas/joinpp2013/JornadaEixo2013/anais-eixo6-estadoculturaeidentidade/asnovastecnologiasdainformacaoecomunicacaoeoprocessodereificacaoededominacao.pdf>.

WARDLE, C. and DERAKHSHAN, H, 2017. Information disorder: toward an interdisciplinary framework for research and policy making. [online]. [Accessed 4 April 2020]. Available from :<https://shorensteincenter.org/wp-content/uploads/2017/10/PREMS-162317-GBR-2018-Report-de%CC%81sinformation.pdf>.

WARDLE, C. 2019. Understanding information disorder [online]. EUA: First Draft. [Accessed 27 June 2020]. Available from: https://firstdraftnews.org/wp-content/uploads/2019/10/Information_Disorder_Digital_AW.pdf?x76701.

WARDLE, C., 2017. Fake news: it's complicated [online]. [Accessed 27 July 2020]. Available from: <https://firstdraftnews.org/latest/fake-news-complicated>