



FAKE NEWS AND THE COVID KIT: AN ANALYSIS OF DISCURSIVE PRACTICES OF SCIENCE COMMUNICATORS AND MISINFORMATION ON TWITTER

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Abstract:

In this research, I analyzed messages from science communicators in the social media diffusion space of Twitter, observing three of the most prominent voices of Brazilian scientific communication that seek to clarify questions about the "cure" and treatment of COVID-19, understanding this theme is impregnated with fake news. In addition, denialist replies to these messages seeking for the interdiction of scientific discourses were analyzed. Thus, it was possible to measure the power of this misleading information in prompting social questioning and discredit towards science itself, in addition to making it clear how the politics of truth is connected to the current historical moment and how institutions assume it, making their desired truths a statute for the prevailing truth.

Keywords: COVID Kit. Denialism. Fake news. Twitter.

Resumo:

Nesta pesquisa, foram analisadas mensagens, em um espaço de difusão de mídia social – Twitter – de três das principais vozes da divulgação científica brasileira na plataforma em questão, que buscam deixar nítidas as questões sobre "cura" e tratamento de COVID-19, já que esta temática está impregnada de fake news. Além disso, foram analisadas respostas a essas mensagens que possuem caráter negacionista e buscam a desestabilização de discursos científicos. Assim, foi possível visualizar a potência dessas informações errôneas em produzir questionamento social e descrédito em relação à própria ciência, além de deixar nítido como a política da verdade está conectada com o momento histórico em que se vive e como essa política é assumida pelas instituições, que tornam as verdades desejadas por elas um estatuto da verdade vigente.

Palavras-chave: Kit COVID. Negacionismo. Fake news. Twitter.

1. Introduction

With the political and economic disputes surrounding truth and the high-speed circulation of information around the world due to the Internet, there began a phenomenon known as fake news networks. I seek to understand these based on the third exclusion system³, constituted by truth/will to truth (FOUCAULT, 1999), with the networks being used as a powerful tool. It is a fact that lies and manipulations have always existed, but the

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³ Foucault writes in *The order of Discourse* (1999) about three groups of procedures for controlling and delimiting discourses: external procedures, internal procedures, and conditions of operation of discourses. External procedures are also described by the author as systems of exclusion, being described in three groups: interdiction, separation, and rejection, and truth/will to truth. Therefore, when there is a reference to the third system of exclusion, I am talking about truth/will to truth.



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term fake news appears in the media by constantly going through the dispute of political power. Moreover, the term specifies that these fake news are purposely produced as a strategy of confrontation between the will to truth and the factuality, and not as mere false or misguided news. The purpose of fake news is clear: to mobilize people against or in favor of one or more political entities.

There are different definitions of the construction of fake news (FARKAS and SCHOU, 2018), as they may be intentionally produced or not. For this research, I will use the definition proposed by Farkas and Schou (2018), understanding this phenomenon as "a discursive signifier that is part of political disputes" (p. 300). Thus, fake news is an object of discourses that use different signifiers, with these not corresponding to the real, in order to bias public opinion in seeking to change or strengthen the existing power structure.

In addition to appearing in traditional media, this phenomenon used as a tool for lies occupies popular places of mass usage, like social media – such as Twitter, Facebook, Instagram, and YouTube. In these platforms, we can find people who do not have the same responsibility as media vehicles with national concessions. In this sense, they become the ideal space for the dissemination of fake news, as not only can any individual make publications, but also there seems to be no interest from these networks in detecting fallacious content. This may be illustrated by cases in which, when notified of the dissemination of fake news, these platforms tend to claim to defend "free speech" (MOROZOV, 2018). Thus, we may observe the fostering of the formation of a network that propagates untruths, with the use of this tool becoming increasingly present.

As mentioned earlier, lies and manipulations of facts have always existed, but the content and financing of these networks are things of contemporaneity, especially the proliferation and reach that fake news networks present. If fake news did not reach a large audience in such a fast manner, it would not be so dangerous (MOROZOV, 2018). Therefore, in addition to the political assistance and funding received, the powerful digital infrastructure that exists for this tool, through subsidized ads, is critical for theories with no factual basis to go viral.

Furthermore, it is essential to point out that, depending on the place of power that is occupied, fake news can be propagated in a way other than through social media. Regardless, the line between factuality and the will to truth exposed by fake news becomes increasingly tenuous in this context. What becomes true for the population is that which receives the most visibility, financial, political, and digital support, and that is impregnated with desire.



As seen in Morozov (2018), the solutions proposed for fake news in some countries are inefficient: banning memes from the internet (Spain); hiring experts to check if the content is accurate (Italy); creating a center for the fight against fake news and generate a fine for those who share lying contents (Germany). These are alternatives that do not take into consideration the depth of the problem at hand. According to Morozov (2018), what should be reconsidered are the foundations of digital capitalism. Due to this phenomenon, monopolies are created to solve problems on specific platforms, such as Google and Facebook. Furthermore, the author mentioned that a factor that would possibly decrease the intensity of the spread of fake news is the consolidation of a society that receives less influence from these networks that are supported financially, politically, and digitally. Therefore, pluralizing mass media and entrusting more people with the decision-making power of resolution about information are ways to avoid the corruption of information diffusion. As seen in Morozov (2018), "just as climate change is the natural byproduct of fossil capitalism, fake news is the byproduct of digital capitalism" (p. 186).

The problematizations described above boosted the goals of this study. I seek to understand how fake news relates to the denialist discourse. To this end, I engage in discourse analysis on the Twitter platform, exploring the replies made to tweets by science communicators who attempt to circulate scientific discourses about possible COVID-19 cures, confronting the disseminated narratives that use fake news. I also analyze the importance of Bruno Latour's concept of translation⁴ for scientific dissemination. Furthermore, I used the theoretical tools of Michel Foucault for discourse analysis (FOUCAULT, 1972) such as the relations of knowledge/power and the places of its inflection.

2. The discourses that probe science

The 21st century is the century with the most advancements in the scientific sphere compared to the previous ones. Considering this area's development, this century is responsible for the great boom in the production of magazine articles (LETA, 2011), besides contributing to an expressive speed in technological changes, particularly regarding information and media (CASTELLS, 1999).

The current context goes against the publications and advancements within the 21st century that we were just discussing: anti-vaccine movements, flat-earth, and other problems

⁴ Connecting society, nature and discourse to science becomes more understandable and meaningful to non-scientists.



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related to the scientific field are disseminated in a fallacious way, as many of these themes are treated as questions answered by science in past centuries.

Science is increasingly focused on serving the technological market and is seen by modern society in a positivistic way – devoid of subjectivity, that is, ignoring the person of the scientist and their peculiarities. In this perspective, such science does not make mistakes. An idea was created that "progress" in science depends on a savior science, as this term refers to the belief in the superiority of present-time in relation to the past and, consequently, of the future in relation to the present (CHAUÍ, 1994). This is presented as if, for example, the molecular orbital theory was superior to the valence bond theory⁵. Science philosophy shows us that scientific "progress" or "setback" does not exist since the epistemological propositions of this vast area are different and discontinuous (CHAUÍ, 1994).

Believing in modern science, in its ability to act in the world and change culture, is now indispensable. Nevertheless, understanding concepts and accepting its presence in our daily life has become an "act of faith." If science, with its codes, its formulas, and its methodologies has failed to be effectively translated (LATOURE, 2013) for the general public, its products, its concepts, and its axioms will not be able to be a part of the consciousness of this population. In this sense, we can speak in faith, with faith being the product of a good narrative.

Modern science is not disseminated as belonging to society, which makes the search for "salvation" result in the search for places of belonging – and this is where individuals are captured by fake news. Furthermore, it is essential to point out that fake news, by itself, seeks to respond in a simple way to problems that are complex, and science, even translated science, will contain complexity. In other words, in addition to reaching places of belonging, these fake news networks are more comfortable and, therefore, easier to be inserted into the social imaginary. The matter is, therefore, that of constituting sufficiently interesting narratives that provide a less harmful option and are less focused on currently known fake news.

⁵ The molecular orbital theory is more complex than the valence bond theory, being the first most reliable to explain the functioning of chemical bonds. However, the molecular orbital theory is extremely more abstract than the valence bond theory (BAIBICH and BUTLER, 2012) and the second one, although it has more limitations and does not explain the functioning of the chemical bonds of several molecules, can and should be used for cases where it works. The fact that the theory of valence bond presents limitations does not make it wrong or worse than the molecular orbital theory, since the more complex one also presents difficulties in explaining some molecular characteristics. When we think of molecular geometry, for example, it is more feasible and understandable to explain concepts through the valence bond theory, as it has a better representational visualization



In turn, fake news invaded the political sphere and allowed the access of some characters from this medium – which based themselves on this new methodology of discursive production and, therefore, of truths (veridiction) – to the power of the State. Michel Foucault characterizes the opposition between what is true and what is false as the third system of exclusion of discourse (FOUCAULT, 1999). In this context, the author describes that truths have mobility and are sustained by the institutions that impose and renew them. This is to say that truths are defined in discourse, and proliferated in places of power, thus being a system of interdiction and exclusion (FOUCAULT, 1999).

3. Data gathering in a social media platform

As stated above, due to the ability of digital platforms to proliferate news and information, there comes the creation of fake news networks, with these being mostly used as surface resolutions for complex problems (MOROZOV, 2018). In this sense, social media is used to disseminate contents that are full of untruths, due to the reach they have in society. We must also take into consideration the relationship of belonging between the public and networks that favor fake news since they seek to reach groups of people who have common positions, and, thus, deliver what science has proven to be insufficient in delivering: understanding of the resolution of difficult problems and a sense of belonging.

To try to confront these networks of falsehood that have been institutionalized and that are part of a political project of death in Brazil, explicitly in force since the 2018 elections, and intensified by the COVID-19 pandemic since March 2020, scientists have occupied spaces on social media to mitigate the damage that fake news has caused (and continues to do so). Thus, these digital spaces become places where there is a great clash between discourses, two of which are evidenced in this research.

The chosen platform for gathering the data, Twitter, is a social network that serves as a tool for the dispute of hegemony of the meaning of different discourses (HARDY and PHILLIPS, 1999; SOARES, F.; RECUERO, R.; ZAGO, G. 2019). In this space, discussions in the public sphere, such as science and politics, take place at the social level and reach an audience that is larger than only a few certain social circles (BRUNS and MOE, 2014). Thinking about fake news, it is common for users in this social network to give new meanings to social and political events (MAIREDER and AUSSERHOFER, 2014). That is, they assign the discourse of their preference over social situations that have high visibility. It is customary, then, to form two groups with antagonistic discourses, which dispute



hegemony (RECUERO and SOARES, 2020). Therefore, I believe it to be appropriate to use this digital platform for our data collection, considering the high dissemination of misinformative content that it presents. In addition to the already expanded scope of Twitter, we have to consider the constant presence of two controversial state leaders who appropriate it as a communication tool, namely Jair Bolsonaro and Donald Trump, to disseminate political actions and to disrespect journalists from traditional media outlets (SOARES, F.; RECUERO, R.; ZAGO, G. 2019).

In order to achieve my delimited goals, I applied four filters in the data collection due to the scope that the research toolbox on the website allows me to use. Because the COVID-19 pandemic is the main subject that has permeated science and society in global debates since 2020, I used it as a theme, with this being the first filter. The second filter serves to restrict the analysis of disinformation about COVID-19, which occurs around "cures" for the respiratory disease—mainly medications. The third filter occurred in the selection of science communicators—three, in all—which was made considering their reach, their former education in the field of health, and their verified seal in Twitter, with this selection being based on the study *Main voices of science on Twitter: Mapping the conversation of scientists and experts about COVID-19* (MEIRELLES, 2020). This study was conducted by the Brazilian Institute of Research and Data Analysis and Science Pulse, with it being a tool created to assist journalists in finding and exploring scientific issues that are in evidence on social media. Complementarily, this filter is part of the selection of denialist responses with engagement to these communicators, which was carried out considering the possibility of using them as emblematic examples. The decision to select science communicators on Twitter for this research goes through the use of this social media platform to disseminate fake news and the role these scientists have in confronting fake news. The fourth and last filter involves the period in which this data was collected: from May to July 2020.

I must mention that the use of misleading news around COVID-19 is due to the large proportion that this phenomenon has reached, having even been defined by the World Health Organization (WHO) as an infodemic. The decision to work with fake news about possible cures for the disease happens due to the various countries of the world being in search of ways to mitigate, prevent and/or treat the effects caused by the virus, and this information is repeatedly disclosed by the media. As science is not able to respond instantly to what much of society desires, the deceptive contents, being already part of the social imaginary, occupy



this space more easily, thinking about the immediacy desired for "the cure" of a respiratory disease that can be fatal.

Finally, it is important to show that the choice of the period from May to July 2020 was made because it was the initial period of the pandemic in Brazil. Back then, there was no prediction regarding medications or vaccines that could fight the effects of COVID-19. Therefore, there was a greater space for fostering conspiracy theories and fallacious discourse. With this delimitation, it will be possible to analyze the clash between scientific and denialist discourse, in addition to understanding the structuring of this type of message and what sort of content is presented.

4. Data analysis: tweets and selected content

Applying the filters related to the scientists, theme, content, quantity, and period, I highlight in this section three tweets by different science communicators that were commented on and described below. It is important to say that these tweets were taken here as an utterance that evidences certain discourses.

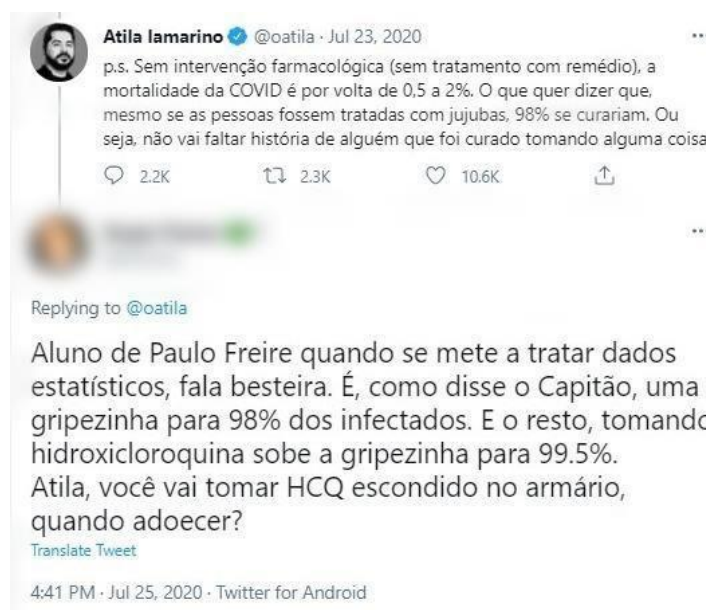


Figure 1. Screenshot of a dialogue between a scientist and a non-scientist. It reads: "Atila Iamarino: 'p.s. Without pharmacological intervention (without being treated with medication), the COVID mortality rate rounds between 0.5 and 2%. This means that, even if people were treated with jellybeans, 98% of them would be cured. That is, there will be no lack of stories in which people were cured taking something.'". The reply reads: "Students of Paulo Freire when they decide to treat statistical data, say nonsense. Yeah, as the Captain said, a little flu for 98% of the infected. And the rest, taking hydroxychloroquine ups the little flue to 99.5%. Atila, will you take HCQ hidden in your closet, when you fall ill?"



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Figure 2. Screenshot of Otavio Ranzani disclosing a study on the ineffectiveness of hydroxychloroquine. It reads: "Otavio Ranzani: 'Look, did it work? No, again. One more HCQ trial, this time for outpatients: no benefits, more side effects.'"

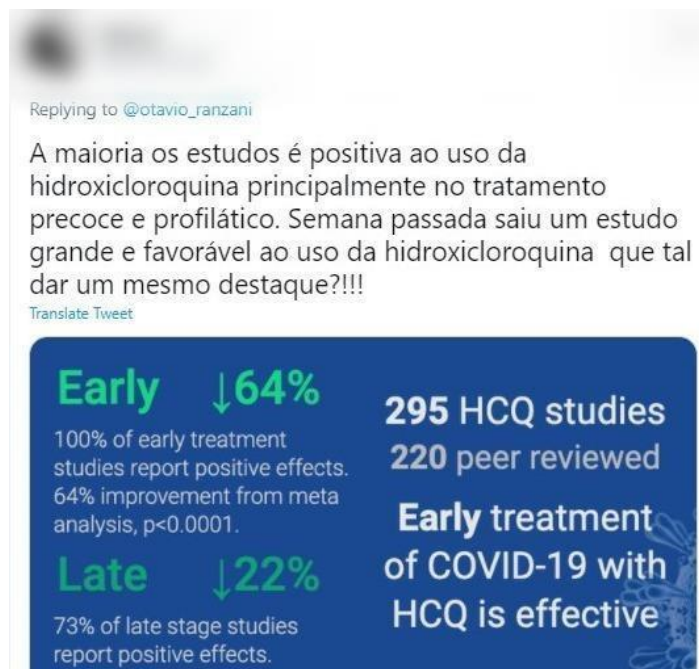
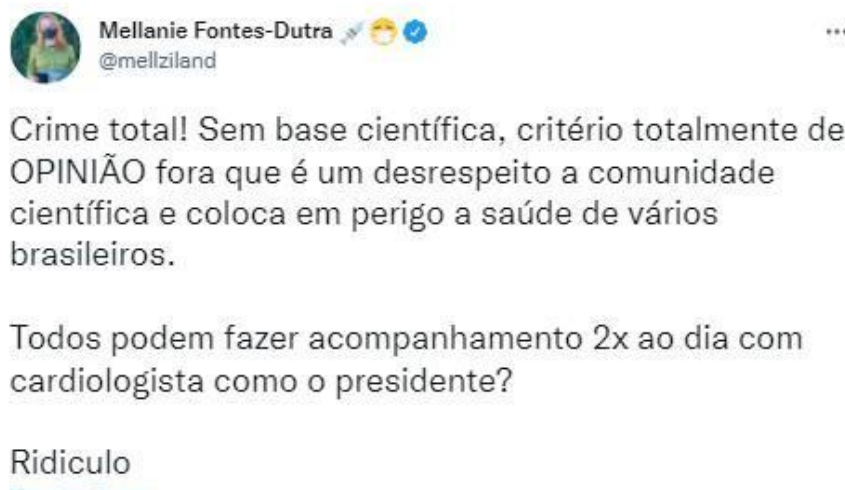


Figure 3. Screenshot of a reply fake research to Otavio Ranzani. It reads: "The majority of studies are positive to the use of hydroxychloroquine, especially in the early and prophylactic treatment. Last week, a large and favorable study was published on the use of hydroxychloroquine, what about giving it the same emphasis?!!!"





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Figure 4. Mellanie's screenshot criticizes the use of drugs without proof of efficacy for COVID-19. It reads: "Mellanie Fontes-Dutra: 'Total crime! No scientific basis, utterly OPINION criteria, let alone it is disrespectful to the scientific community and puts the health of many Brazilians in danger. Do all people have the chance to follow up twice a day with a cardiologist like the president? Ridiculous.'" Below, the reply reads: "Luiza Caires - journalist of sciences: 'Revolting! Ministry of Health sends a document to the presidency of Fiocruz pressing the institution to recommend the nonsensical "early treatment" against covid-19, with chloroquine and all the rest. Crime against the scientific autonomy and the health of Brazilians!'" Below, there is a governmental document with the subject "Early treatment for Covid-19". The terms "early treatment" and "Consider prescribing chloroquine and hydroxychloroquine" are highlighted.



Figure 5. Screenshot of the first reply to Mellanie. It reads: "Interesting that in 2016, according to a news piece by the Globo network in the National News, it was indicated that chloroquine should be used even with pregnant women in the treatment against the zika virus. I do not understand why, from then on, people changed their opinion!!"

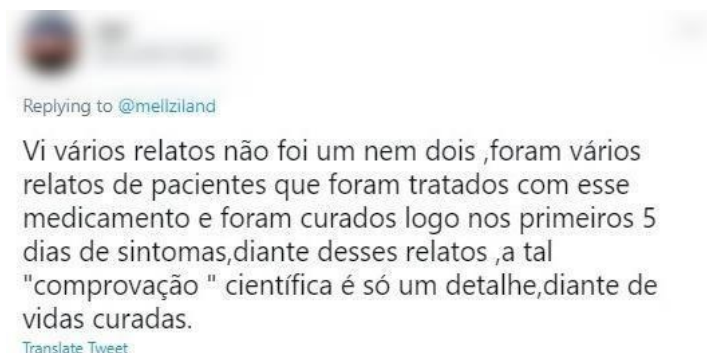


Figure 6. Screenshot of the second reply to Mellanie. It reads: "I saw several reports, not one not two, several reports of patients that were treated with this medication and were soon cured in the first 5 days of symptoms, facing these reports, the so-called scientific "evidence" is just a detail, facing cured lives."

Analyzing the speech of the three scientists, it is possible to find common discourses. By using Foucault's concept of truth and will to truth, we may perceive the existing clash between scientific truth and the truth of Brazilian institutions in 2020-2021. The three scientists seek to face the will to truth established by the government of Jair Bolsonaro and reinforced through the Ministry of Health regarding medications without proven efficacy to treat or provide early treatment of COVID-19.



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In the case of Atila Iamarino, through his comparison with jellybeans, we may say he is seeking to access the act of translation, operating with an analogy and trying to demonstrate how erroneous it would be to say that medications without evidence of efficacy can cure patients. He indicates that, according to the mortality rate of the disease, the largest part of the contaminated patients cure themselves without pharmacological intervention. In the same way, scientist Otavio Ranzani shares a study in which we can see hydroxychloroquine does not treat patients with coronavirus. Additionally, he shows that the use of the drug generates side effects, using science and its methods as a way to reinforce the inefficacy of the drug, thus configuring another confrontational strategy. In the last analyzed tweet, Mellanie Fontes-Dutra treats with absurdity the fact that the Ministry of Health wants to impose the recommendation of medicines without efficacy on a scientific institution. In this case, the approach uses the position of power. That is, in the three cases, it is possible to visualize that the scientific discourse gives the foundation for the primary tweets. Notwithstanding, besides the communicators employing different strategies, the tone used in the confrontation is strongly disseminated: the critique of encouraging the use of ineffective medications for the treatment – early or onset – of a lethal virus that is dangerous to health due to side effects.

The prevailing institutional desire for truth happens as an effect of the discourse of those who occupy the place of power. Currently, in Brazil, a denialist discourse crossed by hate speech is used in this communication. Moreover, the denialist discourse gains strength when it is thought that science has not fulfilled what it has promised, since the Enlightenment occupied the place of responsibility for solving all issues of humanity. Thus, for being seen as not susceptible to making mistakes, objective, progressive, and methodologically rational science is taken as if it did not go through processes of change and its studies were not reformulated or reviewed. Another factor that strengthens denialist discourse is the lack of criticality of non-scientists when receiving the news with dubious and/or unproven content, treating them as factual truth.

The attempt of science professionals who develop scientific communication is to make scientific discourse be accessible to the non-scientific public. Furthermore, they seek to make the current denialist discourse to be discredited. This clash is what Michel Foucault calls one of the processes of discursive control, the will to truth. In the case of the scientist, while imposing verifiable knowledge, this process subtracts the subject by the scientific method, and in the case of the denialist, returns the scientific subject and ideologizes them,



while denying science in the name of a denialist discourse. The discourse of the order will be the one that proliferates and distributes its utterances more strongly. This is one of the reasons why, at this historic moment, scientists leave their laboratories and discuss topics such as COVID-19, which may not even be part of the scope of their bench research.

It is possible to identify in the tweets some procedures for controlling the denialist discourse, and the external procedure called exclusion will be analyzed, which has three principles: interdiction, separation, and rejection. These principles define that certain people can speak. That is, it is not all people who have space to talk about certain subjects – remembering that these speeches contain within themselves types of discourse. Influencers seek to use the place historically given to science to interdict and reject the denialist discourse that displaced people from the scientific space try to impose. Therefore, as the current Brazilian government adopts a denialist discourse, the institutions and the scientific community dispute, stemming from the communicators in this area, the influence on decision-making that permeates, specifically in this case, public health. Consequently, this community seeks to make the discourse of the institutions be rejected since the place of power they have makes for the impossibility of interdicting the dissemination of the discourse that is used by them.

Thinking about the third group of discursive control procedures, it is possible to see that scientific discourse, as various types of discourse, goes through a ritual in which rules are created for those who pronounce it and limit its access before achieving a large-scale. This generates a society of discourse. However, it is possible to note that, in the case of the scientific discourse, difficulties are presented to reach a large scale – people who are not from the scientific field – since the criticality in relation to scientific fake news is insufficient. Therefore, Atila Iamarino, Otavio Ranzani, and Mellanie Fontes-Dutra are, according to the tweets, seeking to make the speech more accessible, since misleading and lying information has been institutionalized by the Brazilian federal government.

It is intriguing to note that, currently, it is necessary for people in the scientific field to say what has been established so long ago, in other clashes. It is not remarkable that some will indicate the use of drugs without proven efficacy and, moreover, it is remarkable that some will indicate drugs that have proven inefficacy (SKIPPER et al., 2020). This is because the denialist discourse, driven by fake news, is not only no longer interdicted but it is also the one employed by those who occupy places of power. Brazilian institutions encourage the use of medicines that have proven ineffectiveness for the treatment of COVID-19 and



that have a responsibility for the worsening of symptoms, besides having side effects that lead to the need for liver transplantation and death (VERNIER, 2021). The use of denialist discourse is part of the death politics institutionalized by the government of Jair Bolsonaro.

The three tweets referring to the replies reflect the strength of the discourse of those who occupy power and achieve what Foucault calls doctrine. Using, again, the French discourse analysis tools, it is possible to notice in the tweeted reply to Atila in Figure 1, that it initially refers to the patron of Brazilian education – Paulo Freire – in a negative way, presenting disdain to one of the greatest thinkers about education and society in the world. This is because this author has been attacked by far-right groups and figures occupying positions of power in Brazil since 2018, being categorized as responsible for the failure of Brazilian public education, in addition to being seen as responsible for a supposed indoctrination in the country's schools (OLIVEIRA and MARIZ, 2019). As it is known, Brazil does not apply Paulo Freire's methods in schools as a whole (GIOVEDI, V. and SILVA, I., 2021), each having its own particularity. In addition, this country has never been slightly close to having a socialist or communist government system. That is, it is already possible to see that the will to truth of the Brazilian federal government, through fake news networks, is present at the beginning of the tweet in question.

Also, in Figure 1, it is possible to analyze that the author disdains COVID-19, calling it "a little flu" as if it were not dangerous to the population. It should be noted that President Jair Bolsonaro has already referred twice in this way to this virus (TAVARES; DE OLIVEIRA JÚNIOR; MAGALHÃES, 2020), which shows that the denialist discourse present in the tweet emanates from the place of power of Brazilian institutions. In addition, it is possible to see the presence of the denialist discourse in the tweet when the author states that hydroxychloroquine would reduce the mortality caused by the virus, which was a medicine indicated by the current president of Brazil – who does not work in health and is not a specialist.

In the tweet in Figure 3, it is possible to observe the author's beliefs, disseminating a false study on the use of hydroxychloroquine for the early treatment of COVID-19. We can see that the construction of this type of fake news seeks to use the logic of scientific discourse to achieve greater credibility. In this case, besides being based on a denialist discourse and the dissemination of this study being directly linked to fake news networks, it is possible to observe a lack of criticality to evaluate the trust in scientific studies, with a clear demand in relation to the dissemination of these studies by scientist Otavio Ranzani.



It is reasonable, at this point, that people in the field of science question themselves about scientific communication with the non-scientific public since the sharing of false or invalid studies on matters involving life and death has become common.

In Figures 5 and 6, it is possible to see, as in Figure 3, the distrust in relation to science due to a lack of understanding about the functioning of scientific processes. In addition, it is possible to visualize in the speech present in Figure 6, implicitly, a denialist discourse, as the need for scientific evidence to use medications is disregarded by the author in spite of the false idea that it would not be serious to use these drugs. The author ignores the possible – and real – side effects and risks of using medications without proven efficacy. In addition, the responsibility for the reduction of mortality is once again attributed to the medications, and science is again treated as something observational, as if different studies were not needed to prove the efficacy of medicines. Therefore, it is possible to find some common points in the speeches of the tweets in reply to the scientists, this being the use of denialist discourse combined with distrust in relation to scientific practices.

5. Conclusion

In this research, I analyzed messages from science communicators in a space for social media dissemination – Twitter –, observing three of the most prominent voices of Brazilian scientific dissemination in the platform that seek to clarify the questions about the "cure" and treatment of COVID-19, understanding this theme is impregnated with fake news. In addition, denialist replies to these messages seeking the interdiction of scientific discourses were analyzed. Thus, it was possible to visualize the power of this misleading information in producing social questioning and discredit in relation to science itself. Moreover, it was clear how the politics of truth is connected with the historical moment in which one lives, and how this policy is assumed by the institutions, which make the truths desired by them a statute of truth in force (FOUCAULT, 1978).

Therefore, in terms of a scientific field, the role of science communication is essential to create a network of resistance and confrontation against fake news on social media, since the proliferation of false information in these spaces is facilitated by the lack of filters that they have, resulting even in a risk to life itself. Thus, it is essential for scientists to occupy these spaces and use the tool of translation for science-generated knowledge, so that it is possible to intensify and facilitate the approximation between science and society through communication. In this sense, we may prevent the dissemination of fake news



present in the narratives used by propagators of the denialist discourse.

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