

COVID-19 IN BRAZIL: GOVERNANCE
AND THE POLITICS OF EXPERTISE

*A COVID-19 NO BRASIL: GOVERNANÇA
E POLÍTICAS DA EXPERTISE*

*COVID-19 EN BRASIL: GOBERNANZA
Y POLÍTICAS DE EXPERTISE*

*Marko MONTEIRO**
*Gabriela DI GIULIO***

ABSTRACT: This article analyzes the Brazilian response to Covid-19, focusing on the role of science and expertise in technical decisions made throughout the pandemic. Based on the recent bibliography, in addition to the analysis of documents and news articles about the development of the pandemic, we will analyze characteristics of the governance of the crisis, taking into account the need to 1) explore the limitations of the concept of denialism to understand the governance of the pandemic by the Brazilian government; and 2) describe active forms of inaction and chaos production as a political strategy. We conclude that there was great effectiveness in propagating uncertainties (political and technical) about aspects of the national and global scientific consensus, as part of both the scientific and political strategy of government actors. Such uncertainties also helped to call into question the most usual and technocratic patterns of the relationship between expertise and politics in the country.

KEYWORDS: Covid-19. Expertise. Risk. Science governance.

* Associate Professor in the Department of Scientific and Technological Policy at the State University of Campinas (UNICAMP), SP, Brazil. Doctoral degree in Social Sciences. Orcid link: <https://orcid.org/0000-0003-4008-4985>. Contact: carambol@unicamp.br.

** Associate Professor in the Department of Environmental Health at the University of São Paulo (USP), SP, Brazil. Doctoral degree in Environment and Society. Orcid link: <https://orcid.org/0000-0003-1396-9788>. Contact: ggiulio@usp.br.

RESUMO: *Este artigo analisa a resposta brasileira à Covid-19, com foco no papel da ciência e da expertise nas decisões técnicas tomadas ao longo da pandemia. Com base na discussão bibliográfica recente, além de análise de documentos e notícias sobre o desenrolar da pandemia, analisaremos características da governança da crise tendo em vista a necessidade de 1) explorar as limitações do conceito de negacionismo para compreender a governança da pandemia pelo governo brasileiro; e 2) descrever as formas ativas de inação e produção de caos como estratégia política. Concluimos que houve uma grande efetividade na propagação de incertezas (políticas e técnicas) sobre aspectos do consenso científico nacional e global, como parte da estratégia tanto científica quanto política dos atores governamentais. Tais incertezas ajudaram, ainda, a colocar em xeque os padrões mais usuais e tecnocráticos de relação entre expertise e política no país.*

PALAVRAS-CHAVE: *Covid-19. Expertise. Risco. Governança da ciência.*

RESUMEN: *Este artículo analiza la respuesta brasileña al Covid-19, centrándose en el papel de la ciencia y la expertise en las decisiones técnicas tomadas durante la pandemia. A partir de discusión bibliográfica reciente, además del análisis de documentos y noticias sobre el desarrollo de la pandemia, analizaremos características de la gobernanza de la crisis teniendo en cuenta la necesidad de 1) explorar las limitaciones del concepto de negacionismo para comprender la gobernanza de la pandemia por parte del gobierno brasileño; y 2) describir formas activas de inacción y producción de caos como estrategia política. Concluimos que hubo gran efectividad en la propagación de incertidumbres (políticas y técnicas) sobre aspectos del consenso científico nacional y global, como parte de la estrategia tanto científica como política de los actores gubernamentales. Estas incertidumbres también ayudaron a cuestionar los patrones más habituales y tecnocráticos de la relación entre la experiencia y la política en el país.*

PALABRAS CLAVE: *Covid-19. Expertise. Riesgo. Gobernanza de la ciencia.*

Introduction: The Failure of Pandemic Governance

The Brazilian response to COVID-19 has been extensively discussed in current literature, both nationally and internationally, highlighting critical elements for understanding the multiple dimensions and repercussions of the pandemic. Noteworthy aspects that set the Brazilian case apart globally include the very high mortality rate despite the country's robust institutional and public health capabilities;

the succession of crises, including a severe political crisis, challenges to democratic order, and an epidemic of misinformation; and the emergence of an extreme-right leader whose effectiveness in shaping public debate through misinformation and initiating severe institutional crises (Daly, 2021; Ricard, Medeiros, 2020) has made Brazil a key example of a broader democratic and health crisis worldwide.

In this article, we aim to contribute to the debate on Brazil's response to COVID-19, focusing on the role of expertise in the technical decisions made by official bodies. Here, expertise refers to specialized knowledge in a particular area, grounded in technical training or scientific basis. Thus, the concept of expertise is always relational: it pertains to a specialty within which a given individual has specific knowledge; however, it concerns knowledge that does not stand alone but is particularly used in technical decision-making processes (Collins, 2011; Nelkin, 1975). Our goal is to shed light on the multiple dimensions of the governance of this crisis, considering how science/expertise was involved in governmental responses to the health crisis caused by the novel coronavirus, particularly in light of the profound political disputes during that period in the country.

Based on recent bibliographic discussions, document analysis, and media monitoring of the pandemic's progression (as part of the CompCore¹), research project), we will analyze the governance of the COVID-19 crisis in Brazil with regard to the need to: 1) explore the limitations of the concept of denialism in understanding the pandemic's progression; and 2) describe the active forms of inaction and chaos production as a political strategy by the Brazilian federal government, then led by former President Jair Bolsonaro. We conclude that there was significant effectiveness in spreading uncertainties (political, technical) and false controversies about aspects of national and global scientific consensus, which challenged the usual technocratic standards of the relationship between expertise and politics in the country.

We argue that one of the most striking features of Brazilian governance during the pandemic, and its apparent failure, was how expertise was used and/or ignored throughout the process. Given that the use of expertise and scientific knowledge on COVID-19 is one of the most highlighted elements in discussions on what constitutes adequate risk and health crisis governance (Di Giulio *et al.* 2023), it is crucial to delve deeper into some dimensions of the Brazilian case, specifically how experts participated (or were ignored) at key moments of the governmental response to the pandemic. The analysis reveals, as we aim to argue, broader patterns of how science/expertise is involved or not in decision-making processes in the country, adding important elements to the debate within the field of Science and Technology Studies (STS) regarding the relationship between science, politics, and democracy.

¹ <https://compcore.cornell.edu/>

We also argue that this discussion transcends both the analysis of the COVID-19 pandemic as a well-defined crisis and issues more closely related to health crisis governance. Reflecting on the role of expertise at this historical moment, as noted by scholars, aids in understanding the roles of science and expertise in contemporary society, as well as the relationship between expertise and democracy. The pandemic and the Brazilian response have been discussed both as a failure in the relationship between science and politics and as a significant dimension of the current crisis of democracy. In this regard, it is still urgent to theorize more robustly the relationships between expertise and decision-making. This is particularly important because the nexus between risk governance, crises, and democracy has clearly impacted major contemporary socio-environmental issues, as seen in recent debates on sustainability and climate change (Barbosa, Alves, Grelle, 2021; Bastos Lima, Da Costa, 2022; Escobar, 2019; Fleury, Monteiro, Duarte, 2022). Thus, this discussion aims to shed light on the relevance of democratic contexts and the use of expertise in addressing crises both in the present and in the future.

The Brazilian Response to COVID-19: Defining a Failure

The Brazilian response to the health crisis caused by the novel coronavirus pandemic has been extensively discussed, partly due to its significant failure (Ferigato *et al.*, 2020; Lotta *et al.*, 2020). The failure can be measured in terms of the inability to protect lives, the existence of a strategy that led to widespread disease transmission, and the trivialization of death (Ventura, Aith, Reis, 2022); the effective lack of federal leadership alongside the Unified Health System (SUS) in a complex arrangement involving different federal entities (Ortega, Orsini, 2020); the erosion of Brazil's established vaccination tradition (Fonseca, Shadlen, Bastos, 2021; Machado, de Siqueira, Gitahy, 2020; Martins-Filho, Barberia, 2022; Matos, Barbieri, Couto, 2020); the federal confusion promoted throughout the pandemic (Vieira, Servo, 2021), involving the Supreme Federal Court (STF) and the states in opposition to the federal government; the federal government's negligence, marked by a series of omissions, obstructions, and actions (Nunes, 2022); and the promotion of confusion and chaos as a crisis governance strategy (Di Giulio *et al.*, 2023).

One of the most visible issues in studies on COVID-19 in Brazil and globally relates to the so-called infodemic, defined as the excess of information, some accurate and some not, whose proliferation makes it difficult for any individual to find reliable sources and trustworthy guidance when needed (Health-PAHO, Health-WHO, 2020). The proliferation and circulation of misinformation that plagued the country throughout the pandemic (Cuan-Baltazar *et al.*, 2020; Ramos, Machado,

Cerqueira-Santos, 2022) were prominent in the broader political debate (Ricard, Medeiros, 2020), but especially contributed to shaping the Brazilian response to the pandemic. By influencing people's understanding of the health emergency and their perceptions of the risks associated with wearing or not wearing masks, getting vaccinated or not, the multiplication of digital communication strategies, producing and disseminating uncertainties, false controversies, and misinformation, has been a major focus in understanding the Brazilian response to this critical moment (Campos *et al.*, 2023).

Another central issue in characterizing the failure of the response to the health crisis in Brazil is the way the Bolsonaro government enacted a form of necropolitics (Mbembe, Meintjes, 2003) directed at the Black population, indigenous peoples, quilombolas, and other historically marginalized groups in the country (Santos *et al.*, 2020). The deliberate decision by this government not to effectively curb the spread of the virus through robust policies, coupled with delays in vaccination, informational and managerial confusion, lack of federal leadership, and the proliferation of misinformation, resulted in avoidable deaths, which many consider crimes against humanity (Ventura, Aith, Reis, 2022). It is from this perspective, in particular, that the way the federal government under Bolsonaro managed the pandemic can be termed a failure. The failure discussed here has as one of its central elements the deliberately created confusion, in addition to the aforementioned ambiguous relationship with expertise.

Governance Patterns: From Inaction to Chaos

Governance, in a broader view, refers to actions, processes, actors, traditions, and institutions through which authority is exercised and decisions are made and implemented (Baiocchi, 2003; Duit, Galaz, 2008; Fukuyama, 2013; Ostrom, 2002). Although the term implies different meanings and conceptual arrangements, the governance paradigm is primarily embedded in societal expectations of inclusion and participation towards more transparent decision-making (Schweizer, 2021) and collectively binding decisions (Van Asselt, Renn, 2011). In health emergencies, such as COVID-19, the complexity of the situation demands a strategic commitment from national policymakers to manage the responses as effectively as possible. As O'Riordan *et al* (2020) recognize, where the COVID-19 pandemic was successfully combated, strong government leadership with particular attention to the social and political context can be observed. Additionally, these situations require extraordinary mobilization of states and societies to better understand and manage associated risks and prioritize collaborative action (Kruczkiewicz *et al.*, 2021). The so-called risk governance, in these cases, implies a response process that considers institutional

structures and sociopolitical aspects in guiding the collective activities of a group or society when dealing with risk issues (Klinke, Renn, 2021).

Di Giulio and colleagues (2023) analyzed different parameters of risk governance to situate the Brazilian response to COVID-19 and to conceptualize the idea of governance through chaos:

The literature describes a set of parameters of risk governance. In this paper, we focus on five (...): (1) transparency and accessibility of data, (2) risk communication, (3) negotiation between actors, (4) social cohesion and public participation, and (5) decisions based on technical and scientific evidence, resources, and contexts. These parameters were selected because they are closely connected with conditions considered essential for successful health emergency responses. They also respond to societal expectations of inclusion and participation towards more transparent decision-making (...) and collectively binding decisions (...). (Di Giulio et al. 2023, p. 594, our translation)

In this article, our focus is primarily on item 5: the way decisions are made based on scientific evidence and specialized knowledge (expertise). Considered a fundamental aspect of risk governance, particularly in health emergencies such as COVID-19, the relationship between expertise and decision-making is often misunderstood or assumed to be naturally linear: access to good expertise would automatically lead to better decisions. However, crises like COVID-19 demonstrate that this relationship is neither linear nor given, but rather contested and politicized. Crisis moments such as a pandemic make these fissures more visible (Jasanoff *et al.*, 2021) and provide an opportunity to analyze the dynamics of problem-solving on such a scale.

In the Brazilian case, Di Giulio *et al.* (2023) reveal that, particularly regarding decisions and expertise, the federal government, besides adopting strategies and taking actions contrary to available and consensual scientific evidence, including recommendations from the World Health Organization (WHO), neglected mass testing, relying on proven ineffective medications, and obstructed necessary negotiations for vaccine acquisition. Various failures were observed in other parameters of risk governance. These inconsistencies, combined with delays in urgent decisions, strategies to divert attention from crucial aspects of the health crisis, efforts to spread misinformation, and obstruction of those actors seeking to act in favor of combating the crisis, form a mosaic that, in the authors' words, clearly indicates a choice for "governance through chaos."

On one hand, this form of governance fueled a sentiment associated with the ideas of "anti-science" and "anti-expertise"; on the other hand, it reinforced a governing approach that sought to amplify uncertainties, escalate false con-

troversies, and foster a broader institutional crisis. In the context of COVID-19, specifically, this governing approach manifested in the existence and actions of the so-called “parallel cabinet.” The group, composed of doctors, politicians, and businessmen, contrary to available scientific knowledge and WHO recommendations, advocated for herd immunity and supported the former president in resisting the implementation of non-pharmaceutical measures (e.g., mask use and social distancing) and vaccine acquisition. The “parallel cabinet,” according to the report (Brasil, 2021) by the Parliamentary Inquiry Commission (CPI), established by the Federal Senate to investigate Brazil’s response to the pandemic, also reportedly supported the government’s actions concerning endorsements for the use of proven ineffective medications and substances, as well as promoted well-coordinated strategies for the dissemination and circulation of false information and news about COVID-19.

Such strategies were also strongly reflected in the actions and omissions of the Ministry of Health, under the coordination of an army general, who not only lacked knowledge about the functioning of the SUS (Unified Health System) but also made decisions contrary to available and consensual scientific knowledge. An example of this was the launch of the TrateCov application at the height of the pandemic crisis in Manaus, AM (early 2021), intended to assist healthcare professionals and patients in expediting the diagnosis and treatment of COVID-19, by recommending the use of proven ineffective medications for the treatment of the disease, such as chloroquine.

Campos *et al.* (2023) argue that the denial of scientific rationality would also constitute a mechanism of self-defense by the federal government. According to the authors, this mechanism was triggered at various points during the pandemic, such as in the statistical omissions regarding COVID-19 infections, hospitalizations, and deaths. Additionally, the insistence on early treatment without scientific support and authorization from Anvisa, reversing the logic from a remedial to a “superior” preventive approach (Varella, 2022), was also noted. The claim that some successful individual experiences were equivalent to scientific evidence and the mobilization of pseudoscientific discourse, engaging doctors who validated it, are also highlighted by the authors.

Another possible perspective on the governance of Brazil’s response to the pandemic comes from Ortega and Orsini (2020), who describe it as a government absence, an element present in much of the public debate and literature. According to the authors, the Brazilian failure stems from both the absence of federal government leadership in responding to the crisis and the refusal to incorporate expertise and science:

This form of governing COVID-19 stands out for its stunning lack of regard for public health, and moreover, the Brazilian President’s concerted attempts

to undermine public health directives issued at the state and municipal levels, as well as by global health leaders at the World Health Organization (WHO), among others. Bolsonaro is not, of course, alone in dismissing the science that undergirds public health directives, nor is he unique in attacking the WHO, but he is one of the most strident opponents of decision making that is rooted in anything resembling evidence, science or expertise. (Ortega, Orsini, 2020 p. 1258, our translation).

Ortega and Orsini (2020) highlight various aspects of governance by inaction, particularly that of the central government, which refers to the federative crisis observed at crucial moments of the pandemic, such as at its onset when mask-wearing mandates were established in various states and municipalities. In Brazil's public health system, SUS, which operates under a tripartite governance structure (municipalities, states, and the central government), the absence of one of the pillars led to severe decision-making problems and general policy discoordination in controlling COVID-19. However, the authors emphasize the political nature of this absence: rather than a crisis of SUS actors, what occurred was a deliberate action by the Federal Executive in the context of an attack on the institutions of the public health system and the democratic republic of Brazil in a generalized manner.

According to the authors, the legacy of the SUS (Unified Health System) is closely tied to the country's history of redemocratization, and the logic of the single system directly opposed the commodification and privatization of health that prevailed during the military dictatorship. Thus, the attack on SUS through the adoption of neoliberal policies was associated, during the COVID-19 pandemic, with a weakening of federal leadership in a system heavily reliant on civic participation. At the same time, they argue, ignorance was mobilized as a means to undermine the role of science in COVID-19 governance. Policies such as vertical isolation and the indiscriminate use of hydroxychloroquine are examples of this, along with the deliberate creation of distrust in consensual scientific knowledge, which the authors also link to perceptions of science as a socially constructed entity.

For Ortega and Orsini (2020), the denial of science, in its complexity and multiple dimensions, was a central aspect of COVID-19 governance in the Brazilian case, as also established by Di Giulio et al. (2023). However, can the dissonance between what was done in Brazil and global consensus, expressed for example by WHO recommendations, be productively analyzed as a denial of science? Is there another way to analyze this process and reconsider these dissidences as forms of displacement of the role of expertise?

The Role of Expertise in Brazilian COVID-19 Governance

The role of science and expertise in decision-making throughout the pandemic is a major topic of interest in academic discussions about Brazil's response to COVID-19. This interest arises, among other reasons, from the prominence of the debate over science throughout the pandemic. The dispute over what constituted scientific evidence in the response to COVID-19, which experts should be consulted, and how denialism should be addressed, significantly shaped public debate and much of the analysis of this health crisis.

While some literature points to a denial of science in Brazil's response, similar to countries like the U.S., Italy, or France, other works argue that denialism is not always the best way to characterize or interpret this response. For instance, Duarte and Benetti (2022) argue that former President Bolsonaro employed an ambiguous discourse: while using a known tactic of exploiting uncertainties in scientific knowledge to "fight science with science," Bolsonaro, the "parallel cabinet," and his associates leveraged a transcendental image of science, reifying the division between science and culture, or science and ideology, even accusing their detractors of being "denialists" for rejecting, for example, the use of chloroquine as an effective treatment.

Oliveira *et al.* (2022) corroborate the notion that there was not simply a denial of science in Bolsonaro's and his allies' public discourses. By analyzing the controversies that emerged throughout the pandemic, the authors found that science was indeed used to validate claims, even when they diverged from or contradicted global consensus. They identify a form of populism based on science, where Bolsonaro's opposition to social isolation was framed as part of a greater mission to protect the Brazilian economy and people from an elite disconnected from the real world.

What these studies reveal, through the analysis of discourses surrounding science throughout the pandemic, is that the divergences between Bolsonaro supporters and their critics cannot be simplistically understood as a critique of science by government supporters who are opposed to reason and driven by anti-intellectual populist thinking. While there are indeed phenomena that can be interpreted through an anti-intellectual lens, and populism, in general, is a useful category for analyzing COVID-19 events, in Brazil, there was less of a critique of science than a mobilization of idealized views of science by those who opposed the scientific consensus.

As Duarte and Benetti (2022) demonstrate, for instance, Bolsonaro and his supporters frequently invoked scientific studies to support their defenses of vertical isolation and the use of chloroquine, even though these claims were rejected by recognized organizations such as the WHO and by a substantial body of scientific work that formed a global consensus against these approaches. Some authors argue that there was a process of demarcation between legitimate science, which was

seen as more reliable because it was proven, and politicized or ideologized science, which underpinned the actions and discursive positions of Bolsonaro and his allies. In this sense, both Bolsonaro supporters and their critics can be analyzed as equally engaged in epistemic demarcation disputes (Fonseca, Ribeiro, Nascimento, 2022), seeking to separate legitimate knowledge from illegitimate knowledge, arguing that the science legitimized by each side should be central to the responses to COVID-19. While Bolsonaro supporters relied on what some authors refer to as “patriotic science,” a considerable portion of the academic community, the press, and government critics advocated knowledge derived from national and global scientific consensus.

Understanding this demarcation work is thus fundamental to understanding the politics of expertise at play during the pandemic. Therefore, we question how productive an analytical framework is that focuses on the science/anti-science or science/denialism divide in analyzing the federal government’s responses to the pandemic. It seems more productive to consider that, on both sides, there is a simultaneous epistemic and political dispute. Demarcating where science begins and ends, its contours, and how it differs from ideology is, therefore, about defining a correct approach to the problem, identifying the best experts to consult, and determining the methods to address it (Keller, 2009; Viglio *et al.*, 2019). Different perceptions and practices of science, as the COVID-19 crisis shows, were articulated with different conceptions of how to govern the pandemic response.

Demarcation work, as a form of boundary work (Gieryn, 1983), seeks to delineate what is considered scientific. As a product of active production, this boundary is not naturally given, inherent, nor does it emerge automatically from nature. Being a process resulting from disputes and conflicts, this boundary is always subject to questioning, and this was made quite explicit throughout the pandemic period in Brazil and other countries. This approach seems more suitable for understanding the political, narrative, and epistemic disputes between supporters and critics of the Bolsonaro government than the notion of scientific denialism, as it places the disputes within the realm of politics rather than framing them as conflicts between rational actors (supporters of science as something stable and true) and irrational actors (engaged in defending ideologies and attacking the sacred institutions of science).

While it is important to understand the attacks on science by Bolsonaro supporters, both within and outside the government, framing them as merely irrational does not advance the reflection on the lasting impacts of a government that neglected the pandemic and continues to receive political support among the Brazilian population, despite Bolsonaro’s electoral defeat. Understanding the effectiveness and adherence of a significant portion of the Brazilian population, including doctors, politicians, and even some scientists, to the Bolsonaro discourse requires us to think beyond a simple duality of science/anti-science or rationality/irrationality.

On the Effectiveness of the Bolsonaro Message

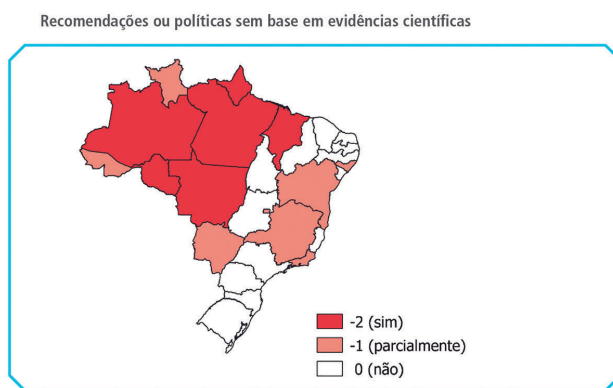
One of the aspects that requires further investigation in the academic debate on the pandemic is the efficiency with which the Bolsonaro message impacted public discourse and its potential implications for pandemic governance. Both at the level of ordinary citizens exposed to incessant messages on social media platforms (WhatsApp, Telegram, Facebook, etc.) and in the actual implementation of pandemic control policies based on the so-called ‘patriotic science,’ there was a widespread and effective dissemination of a specific message about COVID-19 and a manner of addressing it that broadly contradicted all global scientific consensus and the expertise embedded in the country’s ministries and research institutes. The rise of vaccine hesitancy in the country, which was never firmly rooted in Brazil, can be seen as an example, demonstrating a persistent challenge that extends beyond a particular government or political moment.

Another example of how the Bolsonaro perspective concretely impacted the federal response to COVID-19 is the aforementioned TrateCov app, launched in January 2021 (Pagliari *et al.*, 2023), designed as a digital health solution. Available for only two weeks through the Ministry of Health, it sparked intense debate due to its recommendations of treatments not endorsed by scientific consensus for a wide range of symptoms reported by users, regardless of the disease. The app functioned based on user-reported symptoms and suggested possible treatments. Pagliari and colleagues (2023) argue that out of 268 million possible responses on the app, 263 million directed users to take the drugs from the Kit Covid promoted by Bolsonaro supporters—a combination of chloroquine, azithromycin, and other components without proven effectiveness. This recommendation was made even for pregnant women and children.

This effectiveness was not limited to areas directly related to the federal government. It also occurred in contexts where federal entities such as states and municipalities organized themselves in defiance of the federal government, as a counterpoint to its absence in crisis governance. A study by the Institute of Applied Economic Research (IPEA) (Moraes, 2022) shows that, despite the federal government’s lack of leadership, there was an intense mobilization by other federal entities, primarily states, to place science at the center of decision-making regarding COVID-19. However, as the report indicates, this focus on science (referring here to expertise derived from global scientific consensus) did not exclude patriotic science from the implemented policies. According to the study, 69 scientific committees, crisis cabinets, or equivalents were formed by states/districts to serve as knowledge intermediaries (knowledge brokers), filtering available knowledge for decision-making processes.

As this study demonstrates, there was extensive incorporation of recommendations in state committees, especially in the North region, which can be considered outside the scientific consensus. Much of this focus was on advocating for the so-called Kit Covid, as illustrated in Figure 1:

Figure 1: Mapping of the Incorporation of Scientific Evidence by Technical Committees



Source: Moraes, 2022, p. 36.

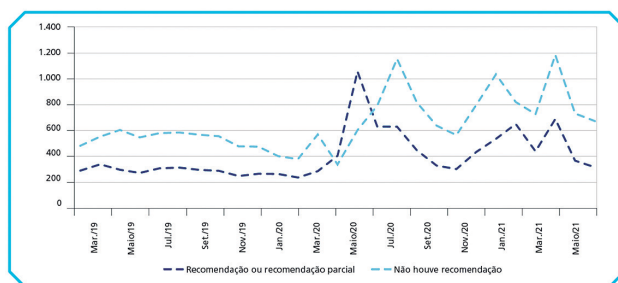
In Figure 1, we see the values assigned by the study’s authors to the assimilation of what they term “recommendations not based on scientific evidence.” The authors assigned negative values to the incorporation of these recommendations, as their non-scientific nature could potentially harm the population through the misuse of medications not proven by science. Regardless of the authors’ perspective, our interest here is to analyze the prevalence of policies based on knowledge contrary to scientific consensus, with the Kit Covid being the most notable example, to reflect on the lasting impact of the Bolsonaro message regarding COVID-19. The mapping demonstrates that even with the presence of scientific committees, which were supposedly based on “best science” or the best available scientific evidence for ensuring more effective pandemic control measures, these committees—or at least parts of them— disseminated Bolsonaro’s policies, which were based on knowledge outside global consensus.

Considering that these committees were formed to ensure sanitary decision-making based on the best available evidence, yet ended up endorsing or advising the use of approaches rejected by consensual science, underscores the need to understand more deeply the phenomenon of science criticism by Bolsonaro supporters and how they managed to persuade significant segments of the population to adhere to certain treatments despite scientific indications to the contrary.

Another interesting finding from the IPEA study that reinforces the widespread adherence to Bolsonaro's treatments was the sale of medications associated with the Kit Covid. Taking Azithromycin as an example, it is possible to observe how relevant it was for a segment of the population to perceive these medications as valid ways to combat the disease, as shown in Figure 2:

Figure 2: Patterns of Azithromycin Consumption

Vendas de azitromicina por 100 mil habitantes: comparação das medianas das vendas nas UFs onde ocorreram recomendações para o "tratamento precoce" e nas demais UFs



Elaboração do autor.

Obs.:1. A fim de facilitar o cálculo, considerou-se que não houve variação no tamanho da população durante o período de análise.

2. Os dados para o Rio de Janeiro não estão sendo considerados, pois os dados para março de 2019 são bastante superiores aos de outros meses e aos de outros estados. É possível que este número inclua dados de meses anteriores ou que se trate de um erro na digitação ou tabulação dos dados.

Source: Moraes, 2022, p. 40.

Figure 2 provides valuable information: the sales behavior of this medication, which can serve as an indicator of the adoption of early treatment or the COVID kit by individuals (not just by committees or federative entities), was no different in states where the treatment was recommended or not. In other words, there is further evidence that the Bolsonaro message was effective, as sales of this medication in states without a recommendation for the use of the COVID kit followed patterns that were rigorously similar to those in locations where such a recommendation was present.

It is important to consider the role of Brazilian doctors in this phenomenon: the adoption of the COVID kit treatment by a significant portion of the medical community was crucial, especially within the group Doctors for Life (Ferrari *et al.*, 2022). It can be argued that the doctor-patient relationship helped explain this adherence. Although we do not have robust data on this aspect, it highlights an issue that has been little explored in analyses of Brazil's response to the pandemic: the way in which the Bolsonaro message spread and gained the support of a significant portion of the population, beyond the actions of a specific government, should

remain a focal point in analyses of the relationship between science, expertise, and politics in the coming years.

Final considerations

As we have sought to demonstrate in this article, the discussion about Brazil's response to COVID-19 remains an important and urgent topic in the social sciences, in debates on emergencies and risk governance, and in the ESCT (Ethics, Science, and Technology Studies). We have attempted to show that the policies surrounding the expertise mobilized in this response still need to be better understood so that we can not only comprehend how this response developed and organized over time, culminating in over 700,000 recorded deaths by March 2024, but also prepare for future crises. Understanding the reasons for the inaction of federative entities, the misuse of information or active misinformation, and the disputes surrounding expertise are fundamental for building more effective social mechanisms to address crises.

As we have argued, far from rejecting science, Bolsonaro supporters sought to justify their positions based on some understanding of what they considered to be the "best science." In this sense, explaining Brazil's response through the lens of denialism, while it opens pertinent possibilities, seems to obscure the need to better theorize the processes of production and demarcation of boundaries between scientific and non-scientific knowledge that are at play. The analytical perspective of boundary work (Gieryn, 1983) helps us better situate which expertise and narratives about expertise were mobilized and how this spread through the state apparatus and permeated individuals.

The effectiveness of the Bolsonaro message, which challenged global scientific consensus and relied on the dissemination of treatments with questionable or unproven efficacy, remains a significant challenge for COVID-19 studies. Understanding this effectiveness goes beyond theorizing the political dispute between specific governments and should move beyond a binary discussion of science versus denialism, which reduces the debate to a simplistic duality and reinforces a transcendental image of technical expertise, as if it were above and beyond politics. Focusing on the 'boundary work' performed by actors helps to clarify the narrative disputes without losing sight of the specific rationalities of the type of message propagated by experts, politicians, influencers, and supporters of former President Bolsonaro. Understanding this message and how it gained such widespread adherence is an important challenge not only for addressing the dynamics of institutional politics but also for the challenges posed to how science and expertise should relate to decision-making, especially in times of crisis.

Although many studies make it clear that there was an active production of ignorance or uncertainty regarding vaccines and mask use, and that this uncertainty was associated with the creation of institutional crises and the mobilization of a vast network of social media profiles to disseminate Bolsonaro's messages, there is still limited understanding of how this message spread and gained traction across different spheres. Concrete data indicate that the message propagated by Bolsonaro's government and its supporters spread effectively both in technical environments, where scientific committees were formed to counter the absence of federal government leadership, and among individuals, who widely adopted the so-called COVID kit or early treatment.

These results present challenges for thinking about responses to health crises (and others) that require better theories and more effective means of reinventing governance and the role of expertise in times of complexity, ambiguity, and uncertainty. This understanding implies not only accusing far-right governments of denialism or irrationality but also producing a more robust theoretical understanding of the effectiveness of propagated messages and the adherence of individuals to them. In future crises, how will the adherence of policymakers and citizens, decision-makers and experts, to globally consensual science be affected, given the presence of strongly organized and coordinated groups working persistently to question this expertise? How can a government effectively address a health crisis while needing to counter alternative knowledge?

Another critical challenge pertains to a better understanding of the use of information and communication technologies in the production and widespread dissemination of information and misinformation, as well as in the circulation of frames. Understanding how platform algorithms function and how they are utilized by specific groups, as well as situating the predominant frames and those activated by these actors and their intersections with the responses and policies adopted, is essential for addressing and combating the effects of infodemic in future crises. Crisis governance largely depends not only on the quality of expertise underpinning decisions but also on the communication of actions, recommendations, and policies. Dealing with future crises may involve, as was the case with COVID-19, confronting a highly organized ecosystem of misinformation, adding another layer of complexity to the actions that need to be considered.

ACKNOWLEDGMENTS: This article benefited from funding from CNPq through Productivity Grant projects 309007/2019-4, 302024/2022-0 (Marko Monteiro), and 311503/2020-9 (Gabriela Di Giulio), as well as from CAPES funding through CAPES-PRINT Process 88887.569693/2020-00 (Gabriela Di Giulio).

REFERENCES

- BAIOCCHI, G. Emergent public spheres: Talking politics in participatory governance. **American sociological review**, p. 52-74, 2003.
- BARBOSA, L. G.; ALVES, M. A. S.; GRELLE, C. E. V. Actions against sustainability: Dismantling of the environmental policies in Brazil. **Land Use Policy**, 104, p. 105384, 2021/05/01/ 2021.
- BASTOS LIMA, M. G.; DA COSTA, K. Quo vadis, Brazil? Environmental malgovernance under Bolsonaro and the ambiguous role of the sustainable development goals. **Bulletin of Latin American Research**, 41, n. 4, p. 508-524, 2022. <http://doi.org/10.1111/blar.13336>
- BRASIL. SENADO FEDERAL. CPI da Pandemia: Relatório Final. Brasília: Senado Federal 2021.
- CAMPOS, F. R.; MENDES, I. M.; LIMA, F. L.; DI GIULIO, G.M. Enquadramentos nos estudos críticos da Saúde Global: uma análise da infodemia de Covid-19 no Brasil. In: Gabriela Di Giulio; Helena Ribeiro; Deisy Ventura. (Org.). **As Múltiplas dimensões da crise de Covid-19: perspectivas críticas da Saúde Global e Sustentabilidade**. 1ed. São Paulo: Faculdade de Saúde Pública - USP, 2023, v., p. 208-232.
- COLLINS, H. **Mudando a Ordem**: replicação e indução na prática científica. Belo Horizonte: Fabrefactum, 2011.
- CUAN-BALTAZAR, J. Y.; MUÑOZ-PEREZ, M. J.; ROBLEDO-VEGA, C.; PÉREZ-ZEPEDA, M. F.; SOTO-VEGA, E. Misinformation of COVID-19 on the internet: infodemiology study. **JMIR public health and surveillance**, 6, n. 2, p. e18444, 2020.
- DA FONSECA, E. M.; SHADLEN, K. C.; BASTOS, F. I. The politics of COVID-19 vaccination in middle-income countries: Lessons from Brazil. **Social Science & Medicine**, p. 114093, 2021.
- DALY, T. G. Understanding Multi-Dimensional Democratic Decay: Lessons from the Rise of Jair Bolsonaro in Brazil. **Rev. Jurídica UFERSA**, 5, p. 61, 2021.
- DI GIULIO, G. M.; MENDES, I. M.; CAMPOS, F. D. R.; NUNES, J. Risk governance in the response to global health emergencies: understanding the governance of chaos in Brazil's handling of the Covid-19 pandemic. **Health Policy and Planning**, p. czad016, 2023.
- DUARTE, D. E.; BENETTI, P. R. Pela Ciência, contra os cientistas? Negacionismo e as disputas em torno das políticas de saúde durante a pandemia. **Sociologias**, 24, p. 98-138, 2022.
- DUIT, A.; GALAZ, V. Governance and complexity—emerging issues for governance theory. **Governance**, 21, n. 3, p. 311-335, 2008.

ESCOBAR, H. Brazilian president attacks deforestation data. **Science**, 365, n. 6452, p. 419-419, 2019.

FERIGATO, S.; FERNANDEZ, M.; AMORIM, M.; AMBROGI, I.; FERNANDES, L. M. M.; PACHECO, R. The Brazilian Government's mistakes in responding to the COVID-19 pandemic. **The Lancet**, 396, n. 10263, p. 1636, 2020.

FERRARI, I. W.; GRISOTTI, M.; AMORIM, L. D. C. D.; RODRIGUES, L. Z. "Tratamento precoce", antivacinação e negacionismo: quem são os Médicos pela Vida no contexto da pandemia de COVID-19 no Brasil? **Ciência & Saúde Coletiva**, 27, p. 4213-4213, 2022.

FLEURY, L.; MONTEIRO, M.; DUARTE, T. Brazil at COP26: Political and Scientific Disputes Under a Post-Truth Government. **Engaging Science, Technology, and Society**, 8, n. 3, p. 107-117, 2022.

FONSECA, P. F.; RIBEIRO, B. E.; NASCIMENTO, L. F. Demarcating patriotic science on digital platforms: COVID-19, chloroquine and the institutionalisation of ignorance in Brazil. **Science as Culture**, p. 1-25, 2022.

FUKUYAMA, F. What is governance? **Governance**, 26, n. 3, p. 347-368, 2013.

GIERYN, T. F. Boundary-work and the demarcation of science from non-science: Strains and interests in professional ideologies of scientists. **American sociological review**, p. 781-795, 1983.

JASANOFF, S.; HILGARTNER, S.; HURLBUT, J. B.; ÖZGÖDE, O.; RAYZBERG, M. **Comparative Covid Response: Crisis, Knowledge, Politics**. Cornell University; Harvard Kennedy School. Cambridge. 2021.

KELLER, A. C. **Science in environmental policy: the politics of objective advice**. MIT Press, 2009. 0262512963.

KLINKE, A.; RENN, O. The coming of age of risk governance. **Risk analysis**, 41, n. 3, p. 544-557, 2021.

KRUCZKIEWICZ, A.; KLOPP, J.; FISHER, J.; MASON, S. Compound risks and complex emergencies require new approaches to preparedness. **Proceedings of the National Academy of Sciences**, 118, n. 19, p. e2106795118, 2021.

LOTTA, G.; WENHAM, C.; NUNES, J.; PIMENTA, D. N. Community health workers reveal COVID-19 disaster in Brazil. **The Lancet**, 396, n. 10248, p. 365-366, 2020.

TOKOJIMA MACHADO, Dayane Fumiyo; DE SIQUEIRA, Alexandre Fioravante; GITAHY, Leda. Natural stings: Selling distrust about vaccines on Brazilian YouTube. **Frontiers in Communication**, v. 5, p. 577941, 2020.

MARTINS-FILHO, P. R.; BARBERIA, L. G. The unjustified and politicized battle against vaccination of children and adolescents in Brazil. **The Lancet Regional Health–Americas**, 8, 2022.

MATOS, C. C. D. S. A.; BARBIERI, C. L. A.; COUTO, M. T. Covid-19 and its impact on immunization programs: reflections from Brazil. **Revista de Saúde Pública**, 54, 2020.

MBEMBÉ, J.-A.; MEINTJES, L. Necropolitics. **Public culture**, 15, n. 1, p. 11-40, 2003.

MORAES, R. F. D. Ciência e pseudociência durante a pandemia de Covid-19: o papel dos “intermediários do conhecimento” nas políticas dos governos estaduais no Brasil. Rio de Janeiro: IPEA 2022.

NELKIN, D. The political impact of technical expertise. **Social studies of science**, 5, n. 1, p. 35-54, 1975.

NUNES, J. Neglect and resistance in Brazil’s pandemic. **Current History**, 121, n. 832, p. 50-56, 2022.

O’RIORDAN, T.; MCGOWAN, A. H.; CUTTER, S.; HAMANN, R.; LAHSEN, M. Reframing sustainability in the emergent age. **Environment: Science and Policy for Sustainable Development**, 62, n. 6, p. 2-7, 2020.

OLIVEIRA, M. B. D.; VIEIRA, M. S.; MONTEIRO, M. S. A.; AKERMAN, M. Covid-19 in Brazil: Political controversies over social isolation measures to control the pandemic. A science vs. antiscience dispute? **Razón y Palabra**, 25, n. 114, p. 158-172, 2022.

ORTEGA, F.; ORSINI, M. Governing COVID-19 without government in Brazil: Ignorance, neoliberal authoritarianism, and the collapse of public health leadership. **Global public health**, 15, n. 9, p. 1257-1277, 2020.

OSTROM, E. Vulnerability and polycentric governance systems. **IHDP Update**, 3, n. 01, p. 1-4, 2001.

PAGLIARI, C.; KLAFKE, G. F.; CAMELO, A. P.; DA SILVEIRA, V. D.; EVANS, J. The COVID-19 App that lasted two weeks: how technology may embody controversial public policies for healthcare and why we should worry about it. **Oxford Open Digital Health**, p. oqad004, 2023.

RAMOS, M. D. M.; MACHADO, R. D. O.; CERQUEIRA-SANTOS, E. “It’s true! I saw it on WhatsApp”: Social Media, Covid-19, and Political-Ideological Orientation in Brazil. **Trends in Psychology**, p. 1-21, 2022.

RICARD, J.; MEDEIROS, J. Using misinformation as a political weapon: COVID-19 and Bolsonaro in Brazil. **Harvard Kennedy School Misinformation Review**, 1, n. 3, 2020.

SANTOS, H. L. P. C. D.; MACIEL, F. B. M.; SANTOS, K. R.; CONCEIÇÃO, C. D. V. S. D.; OLIVEIRA, R. S. de; SILVA, N. R. F. da; PRADO, N. M. de B. L. Necropolítica e reflexões acerca da população negra no contexto da pandemia da COVID-19 no Brasil: uma revisão bibliográfica. *Ciência & Saúde Coletiva*, 25, p. 4211-4224, 2020.

SAÚDE-OPAS, O. P.-A. D.; SAÚDE-OMS, O. M. D. Repositório Institucional para Troca de Informações–Iris. Fichas Informativas COVID-19: entenda a infodemia ea desinformação na luta contra a COVID-19. : Organização Pan-Americana da Saúde Brasília 2020.

SCHWEIZER, P.-J. Systemic risks – concepts and challenges for risk governance. *Journal of Risk Research*, 24, n. 1, p. 78-93, 2021.

VAN ASSELT, M. B.; RENN, O. Risk governance. *Journal of risk research*, 14, n. 4, p. 431-449, 2011.

VARELLA, M. Há grupos de risco para covid? *UOL*, São Paulo, 2022. Acesso em: 20 de outubro de 2022.

VENTURA, D.; AITH, F.; REIS, R. R. Les crimes contre l’humanité dans la réponse du gouvernement brésilien au Covid-19. *Journal de Droit de la Santé et de l’Assurance Maladie*, n. 31, 2022.

VIEIRA, F. S.; SERVO, L. M. S. Covid-19 and federative coordination in Brazil: consequences of federal dissonance for the pandemic response. *Saúde em Debate*, 44, p. 100-113, 2021.

VIGLIO, J. E.; GIULIO, G. M. D.; BARBI, F.; FERREIRA, L. D. C. Narrativas científicas sobre petróleo e mudanças do clima e suas reverberações na política climática brasileira. *Sociologias*, 21, p. 124-158, 2019.

Received on: 15/01/2024

Approved on: 03/05/2024