

Centre For Socio-Legal Studies
Faculty Of Law
University of Oxford
Manor Road, Oxford OX1 3UQ
Tel: +44 (0) 1865 284220 Fax:
+44 (0) 1865 284221
www.csls.ox.ac.uk

Scientific Disinformation Driving Brazil's Covid-19 Response:
A Networked Mobilisation Against Evidence-Based Policy-Making

Candidate:
Caio C. Vieira Machado
Wolfson College

Supervisor:
Prof. Bettina Lange

DPhil Thesis Submission
Hillary Term 2025
Word Count: 99,473

Abstract

This thesis examines how an anti-scientific network in Brazil undermined scientific authority during the Covid-19 pandemic. This research analyses Parliamentary Inquiry Commission (CPI da Pandemia) proceedings, official communications from politicians, and news articles detailing the promotion of unproven 'Early Treatment' drugs over evidence-based public health measures. By combining Manuel Castells' network society theory with Sheila Jasanoff's concepts from science and technology studies, this research demonstrates how this network leveraged communication power to legitimise ineffective treatments and reshape public understanding of science. The network, materialised by the convergence of interests in several fields (e.g. medical, political, and economic, circumvented Brazil's public health system (SUS). The SUS is an institution designed to integrate scientific expertise with social input for democratic governance of public health. The network's success stemmed not simply from spreading misinformation, but from three mechanisms to promote ineffective drugs: constructing parallel forms of scientific authority that appeared legitimate; exploiting institutional weaknesses to create 'accountability gaps' that shielded network actors from liability; and using social media to sustain public influence while evading institutional procedures for drug approval. The research further reveals how democratic institutions adapted by developing their own forms of networked power. The CPI, in its attempt to track accountability, was hampered by the diffuse power that these loosely connected individuals and their communications produced. In turn, the CPI made innovative use of social media to build public support and gather evidence during its investigations. This adaptation highlights key questions about procedural fairness and internet platform governance, as social media companies increasingly influence public debate and how scientific authority is constructed and contested. As a result, protecting democratic institutions also requires ensuring proper oversight of digital platforms. The findings have implications for maintaining institutional effectiveness and scientific integrity in an era of networked communication and contested expertise.

To my parents, Lucila and Flávio, who gave me curiosity, wisdom, and love.

To my grandparents who gave me implacable support, thoughts, and prayers.

To all of the victims, both living and remembered, who gave their lives to these perplexing times.

Acknowledgements:

A bit more than ten years ago, I decided I wanted to obtain a doctoral degree. Nothing occurred as I envisioned – yet, in an odd way, everything worked out as planned. Going into this, I was warned a PhD (a DPhil, in Oxonian dialiect) was a solitary and stressful endeavour. Now I know this to be true - but I also realise it is far from an individual achievement. One might say the acknowledgement sections is the least relevant, as if does not integrate the research and argument of the thesis. The acknowledgements section is, perhaps, the most unjust and daunting of all: how to acknowledge all the ideas, support, friendship, and love that helped me get here? For sure, with all the help I received, I can carry alone only the responsibility for the imperfections: this is an unfinished work that has to be put to an end. Due dates make philosophical reflections much less romantic than we envision.

I'll do my best to acknowledge those who helped me along the way:

First and foremost, I would like to thank my supervisor, Bettina Lange, whose relentless patience and wisdom guided me through these unknown waters. The thesis would not have come into existence without her help. It is also important to acknowledge the support of the Economic and Social Research Council (ESRC) through the Grand Union Doctoral Training Partnership and from Fundação Estudar.

Second, I would like to acknowledge all of the mentors, teachers, and professors who guided me in my career and life, and somehow led me here. I thank my examiners, Nicole Stremlau and Fernando Aith, who have provided me with valuable comments and suggestions at the end of the examinations. Also, for the exchanges we had

academically throughout other opportunities in my career. Muriel Sakanaka, Cristopher Hammond, Bridget Herrera, Raquel Gebara, Chris Kuczynski, Jaqueline Aguiar, Rafael Mafei, William Gilles, Irene Bouhadana, Luciano Floridi, Phil Howard, Helena Webb, and Viktor Mayer-Schönberger are important names that come to mind.

Third, I owe this to my family. My mother and father pushed me to trace steps that were unimaginable to previous generations in my family. For my parents, growing up in the dictatorship era of Brazil – a country often forgotten – setting out to USP, Sorbonne, Harvard, and especially Oxford was a too farfetched dream even for privileged families. I am also thankful for my four grandparents who stood behind me at all times – often not fully cognizant of what these achievements were, but fully and implacably supportive of my journeys and dreams. Living this Oxonian fairy tale would not have been possible without them. I thank all of my cousins and relatives who were witness to this process and supported me, each in their own ways.

Fourth, I need to acknowledge all of the friends I made along the way, and many who stayed physically present while I crossed the globe to test other lives. Regardless, they still regarded me as a friend, and this has been the dearest basis for me. Friends from my multiple homes – Campinas, Rio de Janeiro, São Paulo, Paris, Oxford, Cambridge (fake, MA) – and also so many whom I met in these times of Covid-19, digitally, through Instituto Vero and these emerging digitalized lives that are no less meaningful. Many, many friends here come to mind and listing them is as much a tribute as an injustice to the next friend who sits with me at heart but whose name would render this list too long, and apparently less meaningful.

Especially, I would like to express my gratitude to Laura Pereira and Pedro de Paula who helped me with this thesis by providing comments and reflections.

Finally, I dedicate this as well to all the people who stood and stand by me. Their emotional support, their belief in me, and the sacrifices we went through have certainly motivated me to keep going through all these years.

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Table of Abbreviations

Abbreviation	Full Form/Meaning
AMB	Associação Médica Brasileira (Brazilian Medical Association)
ANS	Agência Nacional de Saúde Suplementar (National Supplementary Health Agency)
ANVISA	Agência Nacional de Vigilância Sanitária (National Health Surveillance Agency)
CFM	Conselho Federal de Medicina (Federal Council of Medicine)
CIB	Comissão Intergestores Bipartite (Bipartite Interagency Commission)
CIT	Comissão Intergestores Tripartite (Tripartite Interagency Commission)
CNS	Conselho Nacional de Saúde (National Health Council)
CIR	Comissão Intergestores Regionais (Regional Interagency Commissions)
CONASS	Conselho Nacional de Secretários de Saúde (National Council of Health Secretaries)
CONASEMS	Conselho Nacional de Secretarias Municipais de Saúde (National Council of Municipal Health Secretariats)
CONITEC	Comissão Nacional de Incorporação de Tecnologias (National Commission for Technology Incorporation)
CPI	Comissão Parlamentar de Inquérito (Parliamentary Inquiry)
CPI da Covid	Comissão Parlamentar de Inquérito da Covid-19 (Covid-19 Parliamentary Inquiry)
DAF	Departamento de Assistência Farmacêutica (Department of Pharmaceutical Assistance)
EBM	Evidence-Based Medicine
GAB/SE	Gabinete da Secretaria Executiva (Executive Secretariat Office)
MS	Ministério da Saúde (Ministry of Health)
PGR	Procuradoria-Geral da República (Office of the Prosecutor General)
PPI	Programação Pactuada e Integrada (Agreed and Integrated Programming)
RCT	Randomised Controlled Trials
SCTIE	Secretaria de Ciência, Tecnologia e Insumos Estratégicos (Secretariat of Science, Technology, and Strategic Inputs)
Secom	Secretaria de Comunicação Social (Secretariat of Social Communication)
STF	Supremo Tribunal Federal (Federal Supreme Court)
SUS	Sistema Único de Saúde (Unified Healthcare System)
USP	Universidade de São Paulo (University of São Paulo)
WHO	World Health Organisation

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'The blame is mine and I can place it on whoever I want!'

Popular Brazilian joke, often wrongfully attributed to the cartoon character Homer Simpson.

Chapter 1

Early Treatment and Brazil's Anti-Scientific Response to the Covid-19 Pandemic

> We shouldn't have closed anything; we shouldn't lock people up at home! […] God has been so gracious that he gave us Hydroxychloroquine for those who get the disease. If you didn't believe in it, well now you'll swallow this truth. I am not a doctor, but I am bold. We have to look for a solution for our own problems and now it has appeared.
>
> *President Jair Messias Bolsonaro*, 01 October 2020, delivering a speech during the inauguration of a water distribution plant in the North-eastern region of Brazil (Author's translation). That day, Brazil had reached 144.767 Covid19[1] deaths.

1.1 Introduction

This thesis examines how a Brazilian Federal Government-led network undermined scientific authority and democratic institutions by promoting unproven treatments over evidence-based public health measures during the pandemic. Through Senate investigation analysis, official communications, and interviews, I show how this

[1] Hereinafter 'Covid' for legibility.

G1, 'Casos e mortes por coronavírus no Brasil em 1º de outubro, segundo consórcio de veículos de imprensa' (G1, 1 October 2020) https://g1.globo.com/bemestar/coronavirus/noticia/2020/10/01/casos-e-mortes-por-coronavirus-no-brasil-em-1-de-outubro-segundo-consorcio-de-veiculos-de-imprensa.ghtml accessed 13 January 2025.

anti-scientific network used communication power to legitimise ineffective treatments and reshape public understanding of scientific expertise. By combining Manuel Castells' network society theory with Sheila Jasanoff's science and technology studies framework, this research reveals how networked forms of power can challenge and transform institutional authority in the digital age.

The network's success operated not through transformation of institutional structures but through systematic manipulation of the informational environments within which existing institutional actors made decisions. Brazil's public health institutions—including the Ministry of Health, CONITEC, and ANVISA—retained their formal procedures and legal authorities throughout the pandemic. However, the anti-scientific network created parallel information ecosystems that fundamentally altered how these institutional actors interpreted scientific evidence, assessed public expectations, and calculated political constraints within unchanged decision-making frameworks. This argument challenges conventional disinformation theories by showing that while the formal institutions and decision-making actors may remain the same, their capacity for evidence-based governance can be effectively paralysed when the public debate that informs and pressures them is systematically reshaped from the outside.

During the Pandemic, the Brazilian government, led by then president Jair Bolsonaro, has opted to deny an emerging and international scientific consensus in public health policy-making. Throughout the entire period of the Pandemic, the Brazilian president advocated for the use of drugs which were scientifically proven not to be an effective response against Covid, particularly in detriment to public health measures such as vaccination and self-isolation. Ultimately, the president's refusal to adhere to scientific recommendations of the World Health Organisation (WHO) and other international and national scientific bodies, including Brazilian authorities, culminated in a Senate investigation into the Federal Government's handling of the

Covid pandemic (here referred to as 'CPI da Covid[2]) and even the recommendation for his indictment at the International Criminal Court for crimes against humanity.[3]

The Brazilian Federal Government incentivised the population to disregard WHO recommendations and consume the so-called 'Early Treatment' drugs, especially hydroxychloroquine, ivermectin, azithromycin, and vitamin D (and variations of these compounds).[4] The government went as far as to deny dozens offers by major pharmaceutical companies, such as Pfizer, to have priority access to vaccines at a lower price, in mid to late 2020, given the country's prior success in vaccination campaigns.[5]

To advance this 'solution', a network sharing similar interests collaborated to fabricate evidence, disseminate disinformation, and distort science to obtain wide-scale public adoption of the 'Early Treatment' as a viable approach to the pandemic. The network involved people outside and inside of the government, sharing a discourse that was contrary to public health measures proposed by recognised scientific bodies, such as the WHO.

As it will be demonstrated throughout this thesis, this *anti-scientific network* was comprised of actors (or 'nodes,' in network terminology) collaborating towards the shared objective of promoting these ineffective drugs as the most relevant measure

[2] Most common name, in official archives the title is 'CPI da Pandemia'.

[3] Isa Soares, Rodrigo Pedroso, Stefano Pozzebon, 'Brazilian Senators Recommend Bolsonaro Be Charged with Crimes against Humanity over Pandemic', CNN, (Brazil, 20 October 2021). https://www.cnn.com/2021/10/20/americas/brazil-bolsonaro-covid-19-intl-hnk/index.html accessed 15 December 2023

[4] Guilherme Casarões and David Magalhães, 'The Hydroxychloroquine Alliance: How Far-Right Leaders and Alt-Science Preachers Came Together to Promote a Miracle Drug' (2021) 55 Revista de Administração Pública 197; and Leticia Cesarino, 'Ethnography of Refracted Publics: From Digital Populism to Alt-Science Ecosystems, London School of Economics, Friday Seminars, May 28, 2021 https://www.academia.edu/49082256/Ethnography_of_refracted_publics_from_digital_populism_to_alt_science_ecosystems_London_School_of_Economics_2021 accessed 15 December 2023.

[5] Octavio Guedes, 'CPI da Covid: Governo Bolsonaro recusou 11 vezes ofertas para compras de vacina | Blog do Octavio Guedes', G1, (Brazil, 27 April 2021) https://g1.globo.com/politica/blog/octavio-guedes/post/2021/04/27/cpi-da-covid-governo-bolsonaro-recusou-11-vezes-ofertas-para-compras-de-vacina.ghtml accessed 1 January 2025

against Covid. They supported these drugs by seeking to mould public opinion and promote adherence to this individual, pharmacological approach to the pandemic. In this thesis, my primary focus is on outlining the composition, methods, and outcomes of this network at a *national* level. I also look at how internet technologies enabled its 'modus operandi' of bypassing science and public institutions. Though not the object of this research, my data and analyses are permeated by recurrent references to the international discussion on (hydroxy)chloroquine and disinformation promoted by other anti-scientific actors, such as Donald Trumps' promotion of similar drugs.

The network's anti-scientific discourse, here understood as all communicative practices generated and distributed by the network of actors led by the Brazilian Federal Government, that either distort, deny, or purport a particular scientific understanding,[6] was aimed at convincing the population, companies, and some Brazilian institutions to adopt the 'Early Treatment' approach to the pandemic. This discourse is peculiar in the sense that it was very effective in subverting *scientific* facts, as opposed to a more generic form of disinformation that produces misleads less formally validated forms of knowledge. This strategy resulted in a significant discrediting of the Brazilian public health and scientific institutions.

My focus is on examining the central actors within this network and their interactions. While the network is vast and involves all participants in this discourse, my interest is directed toward the key figures who, coming from diverse industries, professions, and official capacities and roles, collaborated in shaping this narrative (in network terminology, the most influential nodes). The analysis shows that figures of a wide range of professional capacities, such as the ex-President Jair Bolsonaro, ex-

[6] Sven Oven Hansson, 'Defining Pseudoscience and Science'. In Maarten Boudry and Massimo Pigliucci (eds), *Philosophy of pseudoscience*: Reconsidering the demarcation problem (University of Chicago Press 2013) 61 https://chicago.universitypressscholarship.com/view/10.7208/chicago/9780226051826.001.0001/upso-9780226051796-chapter-5 accessed 15 December 2023.

Minister of Health Eduardo Pazuello, physician Dr. Nise Yamaguchi, and even professional associations such as the Federal Council of Medicine (CFM), have played an important role in building legitimacy for Early Treatment. This was achieved through interactions grounded in a mixture of communication power,[7] health expertise, and institutional capacities. In particular, it is interesting to investigate how figures not usually involved in public health policy influenced the scientific evaluation of a drug by becoming part of the network. Such unconventional figures include the Armed Forces, private insurance companies, and the businessman Luciano Hang, owner of retail megastores around the country.

Disinformation here is defined as *the act of manipulating and misleading people intentionally through communications to achieve political ends*,[8] and is a central puzzle prompting this scientific investigation: how did unvalidated theories supplant scientific knowledge in the response to a public health crisis? The analysis shows that disinformation was widely used as a tactic by the anti-scientific network. Though not the exclusive channel of mobilisation, social media was a prominent stage for the push and coordination in favour of the ineffective drugs, including the President's and his allies Twitter, Facebook, YouTube, and WhatsApp accounts.[9]

The 'Early Treatment' approach adopted by the Federal Government triggered a response from civil society, scientific groups, and politicians from the opposition but also allies of the government. Notably, this 'policy' led the Senate to launch an investigation against the Federal Government resulting in the criminal indictment of 81

[7] Defined in further detail below and in Chapter 2, Castells n 48: the ability to shape behaviour by leveraging the use of communication technologies.

[8] Yochai Benkler, Robert Faris and Hal Roberts, *Network Propaganda: Manipulation, Disinformation, and Radicalization in American Politics* (Oxford University Press 2018)

[9] A few studies on this topic: Leticia Cesarino (2021), Ruediger et al. (2022), Erick Persson, Ewan Ferlie and Juan Baeza (2022), Leticia Cesarino and Victor Silva (2023) and Biscaia (2024)

of its key actors.[10] Online publications, including images, screen captures, and video excerpts, were collected and repeatedly displayed during the CPI da Covid as evidence of actions taken by the anti-scientific network in support of the Early Treatment. This repeated use of the internet and social media technologies indicate the relevance of communication in the promotion of Early Treatment. It also indicates that institutions have a hard time dealing with this diffuse form of communication being repeatedly produced by the members of the network, which is effective in getting people to comply, and hard to be systematised and held to account by authorities.

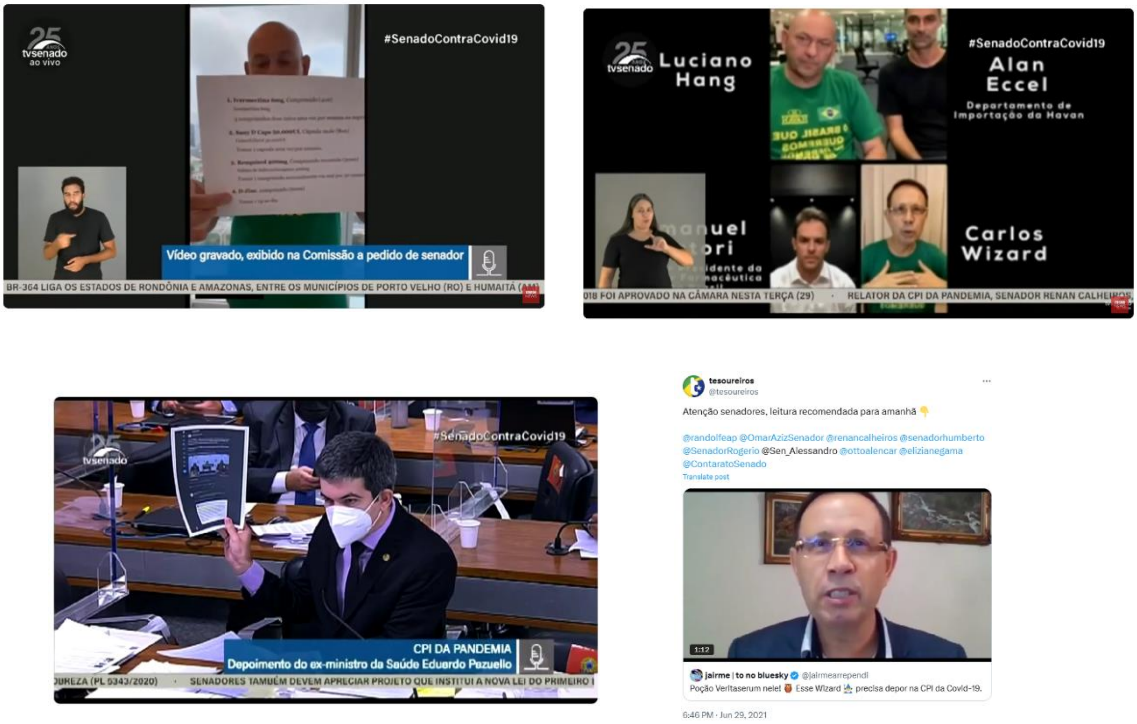


Image 1: Senators present online content involving witnesses and deponents. Source: YouTube TV Senado, Twitter (n 11).

From left to right:

During Luciano Hang's testimony, Senator Renan Calheiros displayed a video of Hang reading drug instructions.

In Carlos Wizard's session, an opposition senator presented a live broadcast featuring Wizard, Hang, a retail representative, and a pharmaceutical association, highlighting their connections.

Senator Randolfe Rodrigues showed a printed screenshot of a Ministry of Health tweet, questioning Eduardo Pazuello on its support for Early Treatment.

[10] Senado Federal, Relatório Final da CPI da Pandemia (2021) https://legis.senado.leg.br/sdleg-getter/documento/download/72c805d3-888b-4228-8682-260175471243 accessed 27 October 2023

A Twitter exchange between activist accounts tagging senators was displayed during Wizard's testimony.

In addition, during the live broadcasted investigations, social media users, ranging from academics to pseudonymous accounts, mobilised around the investigation by the CPI. This thesis also seeks to understand how communication technologies allowed for these new forms of exchange and generation of power, to confront or support scientific and democratic institutions.

One example is shown in Image 1, on the lower right-hand the side. The screen capture shows an interaction on X (formerly Twitter) between two anonymous accounts, @tesoureiros and @jairmearrependi, and the accounts of senators on the platform. On June 2021, on the day before businessman Carlos Wizard was set to testify before the CPI da Covid, @tesoureiros posted: 'Attention, senators, recommended reading for tomorrow,' quoting a @jairmearrependi's May 15 post and tagging opposition senators of the CPI (Author's translation). The quoted post was part of a call to have Wizard testify at the CPI da Covid. It referenced a term from the Harry Potter series, making a play on the businessman's surname: 'Veritaserum potion for him. This Wizard needs to testify at the CPI da Covid'.[11]

This thesis argues that the anti-scientific network led by President Bolsonaro and his allies systematically undermined scientific authority and democratic governance in Brazil through the strategic use of networked communication power to promote the unproven 'Early Treatment' approach. By examining the discursive strategies, communication tactics, and institutional impacts of this network, the thesis reveals how

[11]TV Senado, 'CPI da Pandemia ouve Eduardo Pazuello, ex-ministro da Saúde' (YouTube, 19 May 2021) https://www.youtube.com/watch?v=6u0dXTMDNmQ accessed 12 March 2025; Senado hearings (below); and tesoureiros [@tesoureiros], 'Atenção senadores, leitura recomendada para amanhã 👇 @randolfeap @OmarAzizSenador @renancalheiros @senadorhumberto @SenadorRogerio @Sen_Alessandro @ottoalencar @elizianegama @ContaratoSenado https://t.co/HDnCInYbaM' https://x.com/tesoureiros/status/1409991595357880320 accessed 1 January 2025

modern forms of networked power can challenge traditional mechanisms of public policy-making, with significant implications for the role of science in democratic societies, ranging from the selective side-lining of science to shifting sources of scientific authority.

The remainder of this chapter proceeds as follows. Section 1.2 examines the origins and evolution of 'Early Treatment' as Brazil's primary response to Covid, tracing how this approach emerged from internet disinformation and gained institutional support despite lacking scientific evidence. Section 1.3 contextualises this phenomenon within Brazil's public health system, demonstrating how the anti-scientific network challenged the democratic and evidence-based foundations of the SUS. Section 1.4 presents the research questions that guide this investigation into how networked actors legitimised unproven treatments through anti-scientific discourse. Section 1.5 introduces the theoretical frameworks of Manuel Castells and Sheila Jasanoff that will be used to analyse this case, explaining how their complementary approaches are effective in analysing different aspects of how networks can challenge institutional, including scientific authority. Section 1.6 describes the primary data source – the CPI da Covid investigation – and explains its political significance as both an institutional response to the anti-scientific network and a site of networked mobilisation. Section 1.7 outlines the methodology and additional data sources that will be used to examine how the anti-scientific network operated. Finally, Section 1.8 articulates this thesis' contributions to our understanding of how networked forms of power can undermine scientific authority and democratic governance in the digital age.

1.2 The case of 'Early Treatment' as a response to Covid-19 and its origins in Internet Disinformation

Early Treatment referred to a combination of medications including chloroquine, ivermectin, azithromycin, and nitazoxanide often called the 'Covid kit', [12] which sometimes included vitamin supplements.[13] In an interview live streamed on social media, in May 19 2020, Jair Bolsonaro joked that 'Rightists take chloroquine, leftists take Tubaína'14 (Author's translation). Tubaína is a popular Brazilian brand of soda, made with guarana syrup. In Portuguese, the word rhymes with the word for chloroquine.

The promotion of 'Early Treatment' was widely encouraged by government authorities, including the Ministry of Health and President Jair Bolsonaro, who advocated for the use of these medications through official and personal channels, before substantial scientific evidence for these drugs against Covid existed.[15] As early as March 2020, the Federal Council of Medicine authorised the prescription of hydroxychloroquine for early-stage Covid cases,[16] and the Ministry of Health issued a

[12] In 2020, the Brazilian government claimed nitazoxanide was effective against Covid based on in vitro experiments by the Laboratório Nacional de Biociências (LNBio), supported by the Ministério da Ciência, Tecnologia e Inovações (MCTI). It was later revealed that part of the data published was fabricated.

Estadão N.A., 'Governo usa gráfico de banco de imagens para alegar eficácia de vermífugo contra covid-19' (*IstoÉ*, 19 de October 2020) https://istoe.com.br/apresentacao-de-estudo-sobre-uso-do-vermifugo-inclui-grafico-de-banco-de-imagens/ accessed 11 March 2025

[13] Ferrari et al., "'Tratamento Precoce", Antivacinação e Negacionismo: Quem São Os Médicos Pela Vida No Contexto Da Pandemia de COVID-19 No Brasil?' (2022) Ciência saúde coletiva 27 (11) https://www.scielosp.org/article/csc/2022.v27n11/4213-4213/pt/ accessed 1 January 2025

[14] Blog do Magno, 'Blog do Magno' (19 May 2020) https://www.youtube.com/watch?v=kH3gYVQ67iE&ab_channel=BlogdoMagno accessed 1 January 2025

[15] Leonardo Furlan and Bruno Caramelli, 'The Regrettable Story of the 'Covid Kit' and the 'Early Treatment of Covid-19' in Brazil' (2021) 4 The Lancet Regional Health – Americas https://www.thelancet.com/journals/lanam/article/PIIS2667-193X(21)00085-5/ accessed 2 January 2025

[16] Conselho Federal de Medicina, 'Parecer CFM nº 4/2020' (Conselho Federal de Medicina, 2020) https://sistemas.cfm.org.br/normas/visualizar/pareceres/BR/2020/4 accessed 10 March 2025

protocol guiding the use of hydroxychloroquine and azithromycin in non-hospitalised patients. [17]

Despite growing scientific consensus against these drugs and recommendations from organisations including the WHO and Brazilian Society of Infectious Diseases,[18] Bolsonaro and his allies continued promoting Early Treatment, with the president often brandishing boxes of chloroquine at public events.



Image 2: Bolsonaro persistently promoted chloroquine as the most effective drug, showcasing it at UN General Assemblies, public addresses, and mass gatherings. Source: BBC Brasil.[19]

Amid the CPI's examination of potential omissions and irregularities in the federal government's actions during the pandemic, the endorsement of the so-called

[17] Brasil, 'Nota informativa nº 17/2020-SE/GAB/SE/MS - Orientações Do Ministério Da Saúde Para Manuseio Medicamentoso Precoce de Pacientes Com Diagnóstico da Covid-19', https://download.uol.com.br/files/2021/06/3043732383_nota-informativa-17.pdf accessed 1 February 2024

[18] A journalistic summary of recommendations against 'Early Treatment' from BBC Brasil: https://www.bbc.com/portuguese/brasil-55775106

[19] Paula Adamo Idoeta, 'A história de Bolsonaro com a hidroxicloroquina em 6 pontos: de tuítes de Trump à CPI da Covid' *BBC News Brasil* https://www.bbc.com/portuguese/brasil-57166743 accessed 1 January 2025

'miraculous kit' of Covid drugs played a central role, particularly in the discussions surrounding chloroquine and its lack, or alleged, scientific legitimacy.

Chloroquine and hydroxychloroquine, both antimalarial drugs, gained prominence during the early stages of the Pandemic due to initial laboratory studies suggesting they might inhibit the SARS-CoV-2 virus. The two drugs are chemically similar, with hydroxychloroquine being a derivative of chloroquine. This similarity led to their interchangeable use in various studies and treatment protocols during the pandemic.

These preliminary findings led to widespread interest and the rapid initiation of clinical trials to assess their effectiveness against Covid. Many individuals picked up on these preliminary studies and used them to argue in favour of these drugs, even scientific consensus clearly rejected their efficacy,[20] the most relevant case being Donald Trump and Elon Musk discussed below.

The propagation of 'Early Treatment' was not accidental. The trajectory of chloroquine and hydroxychloroquine as proposed Covid treatments began with preliminary clinical trials in China in February 2020. By March, these early studies caught the attention of prominent public figures, initiating a complex chain of events that would have significant implications for public health policy and discourse.[21]

The initial momentum gathered when influential figures like Elon Musk shared preliminary research papers, while French researcher Didier Raoult published controversial trials claiming a 100% cure rate.[22] The political endorsement of these drugs

[20] Jeffrey K Aronson, Robin E Ferner, 'More about Chloroquine and Hydroxychloroquine | The Centre for Evidence-Based Medicine', 2020, https://www.cebm.net/covid-19/chloroquine-and-hydroxychloroquine/ accessed 1 January 2025

[21] Casarões and Magalhães (n. 4)

[22] On March 16, 2020, Elon Musk shared an unverified study by Gregory Rigano on Fox News and Twitter See: Elon Musk, 'Maybe worth considering chloroquine for C19' (X, 16 March 2020)

gained substantial traction when Donald Trump declared, during a press conference on March 19, 2020, that remdesivir and chloroquine 'are two that are out now, essentially approved for prescribed use. (…) I think it could be, based on what I see, it could be a game changer. Very powerful. They're very powerful'.[23] This advocacy was quickly echoed by Brazilian President Jair Bolsonaro, who ordered increased national production. On March 21, he took to his official social media to enthusiastically announce that the Albert Einstein Hospital, a renowned medical centre in Brazil, had informed him that initial clinical tests on chloroquine's efficacy were underway. He also stated: 'In a meeting with the Minister of Defence, we decided that the Army Chemical Laboratory must immediately increase the production of this drug.' Additionally, he reiterated, 'Last Friday, the president of ANVISA [Brazilian Health Regulatory Agency] decided that chloroquine could not be sold to other countries'.[24] The post states: 'Albert Einstein Hospital and the potential cure of Covid patients'. It would later be known that the order for the Army Laboratory to manufacture one million doses of chloroquine, diverting resources from the production of other essential medicines distributed through the SUS, led to a stockpile of 18 years' worth of supply by August 2020, when compared with the previously annual production of the drug.[25]

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https://x.com/elonmusk/status/1239650597906898947 accessed 12 March 2025. Didier Raoult's paper in the International Journal of Antimicrobial Agents, which Brazilian political figures cited as scientific authority, was later redacted Philippe Gautret et al., 'Hydroxychloroquine and azithromycin as a treatment of COVID-19: results of an open-label non-randomized clinical trial' (2020) 56(1) *International Journal of Antimicrobial Agents* 105949 https://doi.org/10.1016/j.ijantimicag.2020.105949 last accessed 20 March 2025.

[23] N.a., 'Remarks by President Trump, Vice President Pence, and Members of the Coronavirus Task Force in Press Briefing' (The White House, 19 March 2020) https://it.usembassy.gov/members-of-the-coronavirus-task-force-hold-a-press-briefing-march-19-2020/ accessed 11 March 2025

[24] Jair M. Bolsonaro [@jairbolsonaro], '- Hospital Albert Einstein e a possível cura dos pacientes com o Covid-19. https://t.co/Aia4RzTVlp' https://x.com/jairbolsonaro/status/1241434576049840130 accessed 1 January 2025

[25] Natália Portinari, 'Exército brasileiro tem estoque de cloroquina para 18 anos' (Extra Online, 26 June 2020) https://extra.globo.com/noticias/brasil/exercito-brasileiro-tem-estoque-de-cloroquina-para-18-anos-rv1-1-24500378.html accessed 1 January 2025

Media amplification played a crucial role in promoting these drugs. Fox News mentioned chloroquine approximately 300 times between March 23 and April 6.[26] In Brazil, enthusiastic announcements such as the one previously mentioned and displays of chloroquine from March 21[27] onwards were widely disseminated. According to Media Matters, while Brazilian social media and WhatsApp groups spread unverified claims about the drug's benefits.[28] This led to a spike in sales, temporary shortages, and price increases.[29]

The Brazilian government invested significantly in promoting 'Early Treatment' through communication campaigns and hiring social media influencers,[30] while simultaneously rejecting vaccine procurement opportunities from Pfizer for 100 million doses.[31] Evangelical religious networks also became strong supporters of chloroquine use.[32]

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[26] N.a., 'Fox News Has Promoted Hydroxychloroquine Nearly 300 Times in a Two-Week Period' (Media Matters for America, 7 April 2020) https://www.mediamatters.org/fox-news/fox-news-has-promoted-hydroxychloroquine-nearly-300-times-two-week-period accessed 1 January 2025

[27] Hanrrikson de Andrade, 'Bolsonaro mostra remédio feito com hidroxicloroquina em reunião do G20' (UOL, March 26 2020) https://noticias.uol.com.br/saude/ultimas-noticias/redacao/2020/03/26/bolsonaro-mostra-remedio-feito-com-hidroxicloroquina-em-reuniao-do-g20.htm accessed 1 January 2025

[28] Leticia Cesarino and Victor Hugo Freitas da Silva, 'Pandemic States of Exception and the Alt-Science of 'Early Treatment' for COVID-19 in Brazil' (2023) 50 Latin American Perspectives 210

[29] Wanderley Preite Sobrinho, 'Com alta na procura, preço dispara e cloroquina some das farmácias' (May 26 2020, UOL) https://noticias.uol.com.br/saude/ultimas-noticias/redacao/2020/05/26/com-alta-na-procura-preco-dispara-e-cloroquina-some-das-farmacias.htm accessed 1 January 2025

[30] G1 N.a., 'Governo gastou R$ 23 milhões para divulgar tratamento precoce, mostram documentos; medida é ineficaz contra Covid' (G1, 11 June 2021) https://g1.globo.com/politica/noticia/2021/06/11/governo-diz-que-gastou-r-23-milhoes-para-divulgar-tratamento-precoce-ineficaz-contra-covid.ghtml accessed 1 January 2025

[31] Renato Barcellos, 'Carlos Murillo confirma que Brasil ignorou três ofertas da Pfizer por vacinas' (*CNN Brasil*, May 13 2021) https://www.cnnbrasil.com.br/politica/carlos-murillo-confirma-que-brasil-ignorou-tres-ofertas-da-pfizer-por-vacinas/ accessed 1 January 2025

[32] Brian G L Kibuuka, 'Complicity and Synergy Between Bolsonaro and Brazilian Evangelicals in COVID-19 Times: Adherence to Scientific Negationism for Political-Religious Reasons' (2020) 4 International Journal of Latin American Religions 288

Between March and May 2020, the government relaxed regulatory requirements for chloroquine through Resolution 354.[33] This period saw Bolsonaro dismiss Health Minister Mandetta on 16 April 2020 for resisting chloroquine protocols, while his successor, Nelson Teich, resigned after just 29 days over the same issue.[34]

The government's commitment to chloroquine intensified when military General Eduardo Pazuello was appointed Health Minister. On 20 May, the Ministry officially endorsed chloroquine even for mild symptoms, requiring patients to sign consent forms. Pazuello, despite lacking medical training, advocated for the drug while delaying vaccine procurement.

Beyond health-related institutions such as the Ministry of Health and the Brazilian Health Regulatory Agency (ANVISA), other entities were also involved. In the case of the Army, documents revealed that it had agreed to pay 167% more for chloroquine production subsidies, citing the 'demand' and a 'need to produce hope.' This occurred despite the increasing domestic production and the receipt of a donation of 2 million pills from the United States. [35]

In late 2020 and early 2021, during Manaus's healthcare system collapse, the Ministry of Health launched 'TrateCov', an app that recommended the Covid Kit for most symptoms—even for a 1-year-old baby with fever.[36] Rather than addressing critical

[33] ANVISA, 'Cloroquina e hidroxicloroquina: regras para venda e uso' (Agência Nacional de Vigilância Sanitária - ANVISA) https://www.gov.br/anvisa/pt-br/assuntos/noticias-anvisa/2020/cloroquina-e-hidroxicloroquina-regras-para-venda-e-uso accessed 1 January 2025

[34] The relevance of the ministerial successions will be explored in Chapter 6 – 10. A summary and timeline BBC, N.a., 'Covid: Bolsonaro tells Brazilians to "stop whining" as deaths spike' (*BBC News*, 5 March 2021) https://www.bbc.com/news/world-latin-america-56410626 accessed 12 March 2025

[35] Reuters. N.a., 'Exército defende preço da cloroquina: 'Necessidade de produzir esperança" (Reuters, December 12 2020) https://economia.uol.com.br/noticias/reuters/2020/12/22/em-oficio-exercito-defendeu-sobrepreco-de-167-em-insumos-da-cloroquina-por-necessidade-de-produzir-esperanca.htm accessed 1 January 2025

[36] Lara Pinheiro and Mariana Garcia, 'Aplicativo Do Ministério Da Saúde Recomenda Tratamentos Que Não Funcionam Para Covid-19 | Coronavírus | G1'

oxygen shortages, the Ministry sent correspondence advocating for immediate use of 'Early Treatment' drugs.

Interestingly, social media and content platforms, Facebook and YouTube, were pressured by society to remove disinformation on 'Early Treatment' drugs posted by the President and the Ministry of Health.[37] These actions placed these private companies in an awkward role of having to be arbiters on truth of communication from public authorities. In extreme cases, social media platforms removed posts from both the President and the Ministry of Health for promoting potentially harmful treatments.

President Bolsonaro repeatedly cited personal experience, claiming to be 'living proof' that the treatment worked. A video on which he takes chloroquine on camera was published in his official social media hours after testing positive for Covid. While many of his posts were removed by the digital platforms, this particular video remained online, sparking questions and controversy at the time.[38]

Although subtler in his approach, Minister Eduardo Pazuello amplified similar claims. In a January 2021 press conference addressing the crisis in Manaus, he defended what he referred to as 'early medical attention' ('atendiment'), which in Portuguese sounds remarkably similar to 'Early Treatment'. While he refrained from explicitly promoting Early Treatment, his comments blurred the lines, as it would become recurrent in the CPI da Covid. At the press conference, he stated: 'It is necessary to use the technique of early medical attention. We must promote this every day across all

https://g1.globo.com/bemestar/coronavirus/noticia/2021/01/20/aplicativo-do-ministerio-da-saude-recomenda-tratamentos-que-nao-funcionam-para-Covid-19.ghtml accessed 7 January 2025.

[37] Euronews N.a., 'Jair Bolsonaro sanctioned by social media companies for COVID vaccine misinformation' (Euronews, 26 October 2021) https://www.euronews.com/my-europe/2021/10/26/jair-bolsonaro-sanctioned-by-social-media-companies-for-covid-vaccine-misinformation accessed 10 March 2025.

[38] Ricardo Senra, 'Facebook decide manter vídeo em que Bolsonaro toma cloroquina 3 meses após apagar post por 'desinformação'' *BBC News Brasil* https://www.bbc.com/portuguese/brasil-53340258 accessed 1 January 2025

communication channels so that people have a chance to avoid severe illness. Several medications have shown some results, and doctors know what should be prescribed to patients.

The rhetoric often combined pseudo-scientific claims with political messaging, exemplified by Bolsonaro's April 2021 statement that Africa's lower Covid rates were attributable to widespread chloroquine use for malaria.[39] These public announcements were complemented by official campaigns and events. For example, the 'Brazil Defeating Covid-19' conference in August 2020, where the administration continued to insist that chloroquine's efficacy had been undermined by political opposition, rather than lack of scientific evidence.[40]

Paradoxically, even after vaccination around the world had taken off and the pandemic seemed to come under control, the Brazilian Government did not give up chloroquine. As late as 2022, the Bolsonaro government insisted on its efficacy.41 This persistence makes the country an interesting case study on this disconnect between international scientific recommendations and policy.

The dissemination of unverified claims contributed to public confusion and the spread of conspiracy theories. A study published in *JAMA Health Forum* found that individuals endorsing Covid vaccine-related misinformation were more likely to use

[39] Jair Bolsonaro, 'Discurso do Presidente da República, Jair Bolsonaro, na Reunião de trabalho com o prefeito de Chapecó, João Rodrigues' (*Biblioteca*) http://www.biblioteca.presidencia.gov.br/presidencia/ex-presidentes/bolsonaro/discursos/discurso-do-presidente-da-republica-jair-bolsonaro-na-reuniao-de-trabalho-com-o-prefeito-de-chapeco-joao-rodrigues accessed 1 January 2025

[40] 'Em evento sobre pandemia, Bolsonaro defende cloroquina e critica jornalistas' (CNN Brasil, August 24 2020) https://www.cnnbrasil.com.br/politica/bolsonaro-cita-infeccoes-em-ministros-e-volta-a-defender-hidroxicloroquina/ accessed 1 January 2025

[41] CNN N.a., 'Bolsonaro volta a defender remédios ineficazes após PGR pedir arquivamento de investigações da CPI da Covid' (O Globo, 27 July 2022) https://oglobo.globo.com/politica/noticia/2022/07/bolsonaro-volta-a-defender-remedios-ineficazes-apos-pgr-pedir-arquivamento-de-investigacoes-da-cpi-da-covid.ghtml accessed 1 January 2025

non–evidence-based treatments like hydroxychloroquine.[42] Another study relates vaccine adoption to political views,[43] while another found that the mere knowledge on the country of origin of a vaccine made Brazilians more hesitant,[44] indicating that this clash between the political sphere and science has changed the role of science in the way democratic states operate. This correlation highlights how dis- and misinformation can influence public behaviour, leading to the adoption of ineffective and potentially harmful treatments.

In this sense, one of the main contributions of this thesis will be to understand how this discourse unfolds and is sustained by a broader network, including scientists, people holding public office, and business people. This study offers a deeper analysis as to how anti-scientific discourse serves a political agenda and is weaponised to impair the public health system, and ultimately, democratic governance.

The Brazilian federal government's promotion of 'Early Treatment' occurred within the context of the country's robust public health system, the Brazil's Unified Healthcare System (SUS). Established through the 1988 Constitution, the SUS embodies core democratic principles through its institutional design, combining evidence-based policymaking with broad public participation. However, as the case of 'Early Treatment' demonstrates, this democratic institution was challenged by the anti-scientific network that systematically undermined its procedures and principles.

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[42] Roy Perlis et al., 'Misinformation, Trust, and Use of Ivermectin and Hydroxychloroquine for COVID-19' (2023) 4(10) JAMA Health Forum e233689 https://jamanetwork.com/journals/jama-health-forum/fullarticle/2809985 accessed 10 March 2025.

[43] Seara-Morais GJ et al., 'The Pervasive Association between Political Ideology and COVID-19 Vaccine Uptake in Brazil: An Ecologic Study' (2023) 23 BMC Public Health 1606

[44] Gramacho WG and Turgeon M, 'When Politics Collides with Public Health: COVID-19 Vaccine Country of Origin and Vaccination Acceptance in Brazil' (2021) 39 Vaccine 2608

1.2.1 A Constellation of Interests Driving the Anti-Scientific Network

While this thesis primarily examines the mechanisms through which Brazil's anti-scientific network challenged public health institutions, understanding why diverse actors coordinated around 'Early Treatment' requires analysing the convergent interests that networked communication enabled these actors to pursue simultaneously. The network's success stemmed not from a singular motivation but from its capacity to align multiple, often distinct interests that benefited from undermining institutional scientific authority. This constellation of actors and interests, converged to make a solution that did not have scientific backing seems viable in the eyes of the wider public.

Bolsonaro's promotion of 'Early Treatment' served a fundamental political logic rooted in his populist strategy of positioning himself against established institutions. As Borba discusses, Brazilian politics exhibits high personalisation that can override institutional constraints, enabling leaders to project strength through opposition to democratic institutions rather than cooperation with them.[45] The defence of chloroquine and hydroxychloroquine became emblematic of this anti-institutional stance, allowing Bolsonaro to simultaneously challenge the World Health Organisation, domestic health authorities, and scientific consensus while presenting himself as defending Brazilian sovereignty against global health governance. This strategy proved particularly effective during the pandemic, when institutional recommendations for isolation and economic restrictions created genuine tension between public health measures and economic activity.

The network also enabled economic benefits for private sector participants. As documented in the CPI investigations, private healthcare providers like Prevent Senior implemented 'Early Treatment' protocols that reduced their treatment costs while

[45] Julian Borba, 'Cultura Política, Ideologia e Comportamento Eleitoral: Alguns Apontamentos Teóricos Sobre o Caso Brasileiro' (2005) 11 Opinião pública

maintaining patient revenue.[46] Especially for companies whose main client base were the elderly, also the demographic group worst affected by the pandemic, keeping costs low and demand high were crucial. Pharmaceutical companies similarly benefited from dramatically increased sales of hydroxychloroquine, ivermectin, and related compounds, while the Army's Chemical-Pharmaceutical Laboratory gained prominence through expanded production capacity ordered by Bolsonaro.[47] These economic incentives created material foundations for network participation that extended beyond ideological alignment.

Professional interests further motivated network participation, particularly among medical practitioners who gained national prominence by opposing mainstream scientific consensus. Physicians like Nise Yamaguchi and Paolo Zanotto leveraged their opposition to established protocols to achieve media visibility and political access that would have been unavailable through conventional professional channels (See Chapter 9 for examples and numbers). The Federal Council of Medicine's strategic positioning on medical autonomy simultaneously protected these practitioners from professional sanctions while expanding the profession's claims to authority over public health policy decisions.[48] This dynamic enabled individual medical professionals to translate clinical credentials into political influence while protecting themselves from accountability through appeals to professional independence.

Ideological convergence provided additional motivation for network participation. Religious networks embraced 'Early Treatment' as evidence of divine intervention, with Bolsonaro explicitly invoking God's role in providing

[46] Senado Federa, *Relatório Final* CPI da Covid 2021 456-478

[47] CNN Brasil, 'Exército multiplica produção de cloroquina por 12 vezes em 2020' (CNN Brasil, 25 Novembro 2021) https://www.cnnbrasil.com.br/politica/exercito-multiplica-producao-de-cloroquina-por-12-vezes-em-2020/ accessed 25 July 2025.

[48] CFM (n 17)

hydroxychloroquine as a solution to the pandemic.[49] Anti-globalist sentiment similarly motivated rejection of WHO recommendations as foreign interference in Brazilian sovereignty, allowing the network to frame institutional scientific consensus as external imposition rather than evidence-based guidance. These ideological elements enabled the network to mobilise cultural and religious communities that might otherwise have supported institutional public health measures.

Crucially, networked communication technologies enabled these diverse interests to coordinate without requiring formal institutional structures or explicit agreements. As Castells argues, networks can mobilise around shared programmes while allowing participants to pursue distinct objectives, creating what he terms 'programming power' (explained in Section 1.5) that aligns diverse actors around common goals. Social media platforms provided the infrastructure through which political, economic, professional, and ideological interests could reinforce each other while maintaining plausible independence. This technological capability proved essential for creating what appeared to be organic support for 'Early Treatment' while actually representing coordinated action by actors with complementary but distinct motivations.

The convergence of these interests explains why traditional institutional responses proved insufficient against the anti-scientific network. Unlike conventional disinformation campaigns that require sustained coordination and resources, the network operated through control of information flows rather than direct institutional control. Each participant benefited from network success while contributing their particular resources and authority, creating a self-reinforcing dynamic that proved remarkably resistant to institutional counter-measures.

[49] G1 (n 1)

Understanding these convergent interests shed light on why the anti-scientific network succeeded in paralysing Brazil's public health response despite lacking traditional sources of political authority. The network enabled diverse actors to pursue their distinct objectives through coordinated challenge to institutional scientific authority, demonstrating how networked communication can align heterogeneous interests around systematic opposition to evidence-based governance. This analysis reveals that protecting democratic institutions requires addressing not merely the spread of false information, but the structural conditions that enable networks to coordinate diverse interests around challenges to institutional legitimacy.

1.3 Science and democracy in the public health system

Brazil's Unified Healthcare System (SUS) stands as one of the most significant achievements of the country's democratisation process. Established through the 1988 Constitution, the SUS embodies core democratic principles through its institutional design, combining evidence-based policymaking with broad public participation. During the Pandemic, this robust democratic institution was challenged by the anti-scientific network that systematically undermined its procedures and principles.

The SUS incorporates multiple layers of scientific evaluation and oversight for adopting new treatments. At its core lies a three-tiered system: ANVISA evaluates drug safety, National Commission for Technology Incorporation (CONITEC) assesses evidence for new health technologies, and the Ministry of Health coordinates policy implementation. This structure, established through Law 12.401/2011, ensures treatments are based on scientific evidence rather than political expediency.

Public participation forms another pillar of the SUS's democratic character, with Health Councils and Conferences at all government levels allowing citizens to actively participate in policy formation. The requirement that users comprise 50% of Health Council membership demonstrates the system's commitment to community input.[50]

The SUS operates across federal, state, and municipal levels, ensuring health policy reflects both national standards and local needs. According to Brazil's National Health Survey in 2019, 71.5% of Brazilians rely on its services in some form. [51]

However, the challenges posed by the anti-scientific network reveal how democratic institutions, despite robust design, remain vulnerable to networked *communication power*. While the SUS's structure remained intact, its ability to deliver evidence-based policy was significantly compromised. This raises questions about how the network's discourse eroded institutional safeguards and manipulated the balance between scientific expertise and political authority.

The challenges posed by the anti-scientific network to the SUS' robust institutional design raise important questions about how networked forms of power can undermine scientific authority and evidence-based governance, even in the context of a well-established public health system. These question form the core of this thesis, which I will outline in the following Section.

[50] Cunha PF and Magajewski F, 'Gestão participativa e valorização dos trabalhadores: avanços no âmbito do SUS' (2012) 21 Saúde e Sociedade 71

[51] Instituto Brasileiro de Geografia e Estatística (IBGE), 'Pesquisa Nacional de Saúde 2019', https://www.ibge.gov.br/estatisticas/sociais/saude/9160-pesquisa-nacional-de-saude accessed 1 February 2024.

1.4 Research Questions

At the core of this thesis lies a fundamental question about how networks can challenge scientific authority and democratic institutions in contemporary society. Specifically, this research asks:

> How did the discourses generated by a network largely disconnected from the institutions of the Brazilian public health system, over the years of 2020 to 2021, ignore and misconstrue scientific evidence to legitimise the adoption of 'Early Treatment' as a major policy response during the Covid-19 pandemic in Brazil?

To address this central question, the research examines four key aspects:

Sub-RQ 1: How did the CPI da Covid reconstruct the anti-scientific network and discourse, including its main arguments?

Sub-RQ 2: How was the adoption of 'Early Treatment' justified by members of the anti-scientific network as the best health measure available during the Covid-19 pandemic to the detriment of other scientifically grounded measures such as vaccination, self-isolation and social distancing?

Sub-RQ 3: Which new forms of communication power did the anti-scientific network mobilise in order to obtain widespread social acceptance, including among Brazilian citizens, of 'Early Treatment' as the best Covid-19 response?

Sub-RQ 4: How did the CPI's proceedings and investigations leverage social media's spontaneous engagement in order to counter the anti-scientific network's communication power?

These questions guide the analysis through progressively deeper levels of understanding – from mapping the network's structure, to analysing its discourse,

examining its communication strategies, and finally discussing how institutions responded. The theoretical framework for this study is discussed below.

1.5 Overview and Justification of Theoretical Frameworks

1.5.1 Castells' theory of Network Society as the Overarching Framework

Manuel Castells' theory of the network society provides an excellent framework for analysing how a network successfully undermines an institution. The theory is particularly valuable for examining disinformation not just as false or manipulative content, but as an expression of broader network mobilisation. Castells explains how digital networks enable the rapid spread of alternative narratives that can effectively compete with institutional expertise. This helps analyse how the anti-scientific network constructed and disseminated its discourse around Early Treatment. Shifting away the focus from disinformation or other communication studies, this thesis uses Castells' theory to understand how new forms of communication fundamentally reshape the way society organises itself to promote political change, including relations of power and institutional authority.

Beyond communication, Castells theorises how networks transform institutional power and democratic governance. His framework explains how new communication patterns alter political strategies and incentives, pushing actors to rely more on networked forms of mobilisation. This aids in understanding both how the anti-scientific network operated politically and how democratic institutions like the CPI adapted their approach. The theory's attention to how networks can either support or undermine democratic processes is especially relevant for analysing the institutional impacts of 'Early Treatment' promotion.

The theory's explanatory power stems from its understanding of networks as a growing dominant organisational form in contemporary society. Castells argues that the widespread adoption of digital communication technologies enables networks to bypass and challenge traditional institutional channels, which are defined by their procedures to promote deliberation, collect input from society, and transform these social objectives into political action. The theory outlines how networks can mobilise social and political change outside established democratic processes – precisely what occurred when the anti-scientific network circumvented normal public health policymaking channels in Brazil.

Castells' concept of 'communication power' is particularly relevant for understanding how the anti-scientific network gained influence.[52] He argues that power in the network society operates primarily through constructing meaning in people's minds via communication. This helps explain how the anti-scientific network legitimised 'Early Treatment' and obtained wide social adherence despite lacking scientific evidence.

The framework also explains the tension between networked and institutional power that characterised Brazil's pandemic response. Castells describes how networked forms of organisation challenge institutional authority while institutions attempt to adapt to and harness network dynamics. This captures both how the anti-scientific network undermined public health institutions and how the CPI da Covid later leveraged network communication in response. His concept of 'insurgent politics' – networked mobilisation that challenges institutional logic - describes the anti-scientific network's approach.

Castells' theory of a network society will be described in detail in Chapter 2, where I will lay out key concepts of the framework which I will later use in the analysis. I

[52] Manuel Castells, *Communication Power* (Oxford University Press, New York 2009).

will also describe its integration with the work of Sheila Jasanoff, outlined below and further developed in Chapter 4.

1.5.2 Jasanoff's STS Concepts as Complementary Framework for Discourse Analysis

While Castells' network society theory provides a robust framework for understanding how digital networks transform power dynamics and social organisation, Sheila Jasanoff's Science and Technology Studies (STS) approach offers complementary analytical tools for examining how scientific authority is constructed and contested within these networks. By integrating these two theoretical perspectives, this thesis is able to analyse both the broader shifts in power and communication patterns. This analysis reaches the more granular dynamics of how scientific legitimacy is negotiated and challenged through a network and in interaction with the public health system.

Castells explains how communication networks can bypass traditional institutions, pressure, and reshape power dynamics. However, Castells' work has not dived deeper into the mechanics of these tensions between networks and institutions at discourse level, dissecting, for example, how disinformation might be used to target democratic institutions. In the case of Early Treatment, we have an opportunity to understand how the process of knowledge production and decision-making is validated and challenged. This is where Jasanoff's concept of co-production becomes valuable, shedding light on how scientific knowledge and social order are mutually constructed and co-produced. In the Brazilian case, this helps explain how the anti-scientific network not only circulated alternative narratives but actively participated in constructing new forms of 'scientific' legitimacy outside traditional institutional channels.

Legitimacy is a key connection between Jasanoff's and Castells' work that is instrumental in this thesis. According to Castells, legitimacy is essential for political power to be stable and effective.[53] It is the process by which power is justified and accepted by society. To him, modern societies rely heavily on the ability to communicate effectively and persuade the public. Political leaders and institutions use media and communication networks to construct narratives that validate their authority.

In the network society, legitimacy becomes fragmented and contested because of the plurality of actors, platforms, and narratives. Hence, the maintenance legitimacy through traditional institutions is increasingly challenged by decentralised networks and alternative media. This exacerbates what Castells calls the crisis of legitimacy, which stems from the widespread mistrust in institutions and their capacity to respond to global challenges.

Jasanoff also reflects on the crisis of legitimacy in modern governance and the growing need to persuade the public of the best policies, especially when institutions fail to align with public expectations or fail to adequately address uncertainty, risks, or ethical concerns. In her works, Jasanoff examines how legitimacy in science and technology governance is constructed through processes of public reasoning and the co-production of knowledge and societal norms. She argues that scientific expertise gains legitimacy not merely through the accuracy or objectivity of its claims but through institutional processes that align scientific practices with public values and expectations.

The role of public reasoning is emphasised by her, arguing that legitimacy arises from inclusive, transparent, and participatory processes in which stakeholders have a voice in shaping policies and decisions. In addition to participation, accountability also has a central role. Jasanoff stresses the importance of ensuring that decision-making

[53] Ibid

processes and institutions are transparent, responsive, and aligned with public interests. In this, a relevant part of evaluating technological risks and regulation depends on the need for institutions to justify their actions and decisions to the public, thus earning trust and legitimacy.

As such, Jasanoff's work helps us understand how the anti-scientific discourse operated *within* the science and policymaking bodies. In other words, how a network pressured an institution, such as the SUS, and how scientific authority was disputed as a form of legitimating power in the context of the Pandemic.

Jasanoff's works are complemented by a series of concepts that help analyse the discourse of the anti-scientific network. Network actors simultaneously invoked and undermined scientific expertise, creating strategic ambiguity around science and how they employed it to legitimise Early Treatment. Two concepts are helpful in understanding these strategies. First, *Boundary-work* provides insights into how the anti-scientific network negotiated the boundaries between science and politics. This concept allows us to identify how discursive strategies were used to establish or challenge scientific authority. Second, *Blame avoidance* highlights how public officials and institutions shape their behaviour to escape responsibility. This behaviour stems from the inherent risks of accountability processes, where actors may be scrutinized, criticised, or held responsible for failures or unpopular decisions.

The combination of Castells and Jasanoff's ideas provides us with a comprehensive methodology to understand how network actors not only leveraged new communication technologies, but effectively reconstructed scientific authority and legitimacy. Below, I will outline the data used to perform this analysis.

1.6 The Data Sources and Methods

This thesis is primarily interested in the operation of a network that produced online discourse that reconstructed scientific understandings and authorised public health solutions outside the public health institutions. In this Section, I will explain what was the CPI da Covid and why it is a valuable data source to answer the Research Questions. I will briefly outline the methods used to analyse the data, which will be fully fletched out in Chapter 5. In the final Section (1.7), I will provide an overview of the arc and arguments of this thesis.

1.6.1 An Overview of the CPI da Covid and its Political Relevance

The primary source of evidence for this thesis is the investigation conducted by the Brazilian Senate on the Federal Government's response to Covid, the CPI da Covid. The CPI became widely recognised for spotlighting several political actors of the anti-science network, in an effort to investigate the 'actions and omissions of the Federal Government',[54] as previously mentioned. In it, many of the individuals known for publicly advocating and endorsing 'Early Treatment' were summoned or invited to provide clarifications to the Inquiry, in live televised and live streamed sessions.

The Commission was launched on April 27, 2021, following the joint approval of two existing requests for investigation. First, from February 2021, opposition Senator Randolfe Rodrigues filed a request to 'investigate the actions and omissions of the Federal Government in dealing with the Pandemic in Brazil, particularly regarding the worsening health crisis in Amazonas due to the lack of oxygen for hospitalized

[54] Senado Federal, 'Requerimento N° 1372, De 2021' (2021),' https://www25.senado.leg.br/web/atividade/notas-taquigraficas/-/notas/r/9996 accessed 31 December 2023

patients.'[55] Later, there was a request from the pro-government Senator Eduardo Girão, on April 10, which expressed the government's coordination efforts to investigate the 'misappropriation of federal financial resources allocated to combat the effects of Covid-19'.[56] As a result, the CPI emerged from two requests with opposing political interests. This political context is emphasised by the extract below, which formed part of how the CPI described its purpose:

> *Purpose:* To investigate, within a period of 90 days, [the actions and omissions of the Federal Government in addressing the Covid-19 pandemic in Brazil], with a special focus on the worsening health crisis in the Amazonas state due to the lack of oxygen for hospitalized patients. [Additionally], the commission aims to probe possible irregularities in contracts, bidding fraud, overpricing, misappropriation of public funds, signing contracts with shell companies for generic or fictitious services, and other illegal activities. These investigations will involve the use of resources originating from the Federal Union. Furthermore, the commission will examine other actions or omissions committed by federal, state, and municipal public administrators in dealing with public affairs during the state of calamity caused by the 'SARS-CoV-2' Coronavirus Pandemic. [It is important to note that the scope of the investigation is limited to the oversight of Union resources allocated to other federative entities for prevention and combat measures against the Covid pandemic] The investigation excludes matters falling within the

[55] Ibid

[56] Ibid

> constitutional competencies of States, the Federal District, and Municipalities (Author's translation).[57]

In particular, the CPI da Covid took place during critical phases of the pandemic, becoming a real-time investigative instrument, an aspect that distinguished it from other CPIs, generally conducted retrospectively to the investigated events. In Brazilian current political system, a CPI can be set in motion if signed by one third of the members of either the Congress or the Senate. This design was a constitutional choice to ensure that even political minorities have the power to scrutinize matters of public interest. However, the composition of the CPI is proportional to the number of seats each party holds in the relevant legislative house. As such, though a political minority may set the CPI in motion, it does not have the power to fully control the proceedings and composition, and these are subjected to political negotiation between parties and the president of the house.

The CPIs, as an investigative mechanism, rely on the investigative powers that are constitutionally attributed to all powers, including the Legislative Branch. However, the Constitution only grants the power to investigate, obtain evidence, and produce a report, without any powers of effectively judging or punishing individuals directly.[58] The CPI's final report is received by other public authorities, such as the General Prosecutor of the Republic, or the Judiciary, which can then use the relevant information to pursue legal liability.

Even without any means of directly handing down punishment, the CPI investigations are also a place of heightened visibility, particularly effective in unravelling

[57] Senado Federal, Relatório Final (n 10)

[58] Constituição da República Federativa do Brasil de 1988 (Brazil) https://www.planalto.gov.br/ccivil_03/Constituicao/Constituicao.htm accessed 11 March 2025.

political scandals. All of the investigation is made available online and the hearings are televised via the Legislative Branch's public broadcast TV channels, either TV Senado or TV Câmara.

In the case of CPI da Covid, not only was it a pivotal case of audience engagement, proving to be an opportunity for legislators to reach the public eye in an urgent situation, but it was also a potential means of using traditional institutions of the democratic process to stress the government of Jair Bolsonaro though communication power. In particular, the CPI da Covid became a particular case of audience engagement and online mobilisation dominated by users aligned to the opposition.[59]

The audience of the CPI da Covid, which on this occasion widely reverberated on social media, gave the CPI and its members enormous visibility, which they attempted to capitalise as network powers. The interplay between communication and politics was so intense that many of the people involved in the CPI returned as candidates for the Executive and Legislative branches at the 2022 General Elections.[60] Several of these testimonies were also reproduced by news outlets, entertainment portals, and political channels on YouTube and other platforms, such as Twitch.[61] These facts

[59] Lucas Mathias., 'Raio-X da CPI da Covid: oposição dominou debate nas redes, mas bolsonarista Marcos Rogério foi o senador que mais ganhou popularidade digital' *O Globo* (Brazil, 22 October 2021) https://blogs.oglobo.globo.com/sonar-a-escuta-das-redes/post/raio-x-da-cpi-da-covid-oposicao-dominou-debate-nas-redes-mas-bolsonarista-marcos-rogerio-foi-o-senador-que-mais-ganhou-popularidade-digital.html accessed 15 December 2023.

[60] Among other cases, one of the more prominent representatives from the Senate's Women's Caucus in the CPI was Senator Simone Tebet. Put under the spotlight after some highlights during her inquiries, there were later explicit positive mentions of her participation in the CPI by the time when she returned as a candidate for Presidency in 2022. Currently, she is a minister in Lula's Government. More information about her and other CPI candidacies in a press report: https://www.em.com.br/app/noticia/politica/2022/08/22/interna_politica,1388048/da-cpi-da-covid-para-o-palanque-eleitoral-veja-quem-virou-candidato.shtml

[61] The mentioned audience numbers were widely documented during that period, as the CPI da Covid garnered significant attention from the media due to its growing viewership and engagement. This is exemplified by the following press report, indicating the CPI reached audience levels close to the major Brazilian reality show: https://oglobo.globo.com/cultura/televisao/cpi-da-pandemia-novo-bbb-21-na-audiencia-no-engajamento-nas-redes-sociais-pazuello-lidera-ranking-de-visualizacoes-25025007

point to an interesting relationship between the institutional mechanisms and the (social) mediatisation of politics.

1.6.2 The Relevant Testimonies and Documents of the CPI da Covid

Even though the CPI was a result of two opposite requirements, the investigation was primarily led by independent and opposition politicians to Jair Bolsonaro, but there were also a minority of Senators who supported 'Early Treatment' and the federal government participating in the CPI. Both sides disputed who was going to be summoned to provide testimony and who was going to be present during the interrogations of the Senator, where their questions and comments also pushed for specific views.[62] The testimonies present detailed and antagonistic perspectives about attributing scientific status to Early Treatment, on the one hand, and holding individuals to account for actions broadly embraced by members of the anti-scientific network, on the other.

In particular, the CPI was concerned with how Bolsonaro's government refused to follow scientific recommendations both on policy-making but also in declarations to the public. A part of the CPI was dedicated to investigate the suspicion of corruption related to the acquisition of vaccines, which speaks a lot to the economic interest of the disinformation in relation to Early Treatment. However, these testimonies will not be analysed within the scope of this thesis, as they are mostly focused on economic opportunism as opposed to the construction of science to manipulate public opinion.

[62] For a complete description of the members and parties represented in the CPI, see Appendix II – Overview of the CPI's Composition.

The original request drafted by Senator Randolfe Rodrigues and other senators stated that 'the Government of Bolsonaro seems to have chosen to wash its hands and remain silent, even encouraging treatments without any scientific evidence, in addition to hindering the efforts of mayors and governors' (Author's translation).[63] In this sense, a stance pro or anti-science became an essential part of the dispute around Bolsonaro's government and the Pandemic in Brazil. The CPI da Covid gathered a substantial collection of testimonies and documents that expressed disputes over the government's approach to combating the pandemic, centring around the alleged alignment or divergence between the practices of the Federal Government and scientific evidence.

As such, the CPI became an investigation aimed at depicting certain connections between public policy and science, evaluating the adequacy and effectiveness of Bolsonaro's political actions when Brazil counted, at the time, almost 500,000 Covid-related deaths.[64] The CPI heard from various political actors, including four Brazilian Health Ministers who served during the pandemic. The CPI discussed the legitimacy of their actions and their relationship with the President, based on the understanding of scientific evidence and the appropriateness of their roles as official public agents.

In the CPI hearings, scientists, medical professionals, and other stakeholders provided their opinions on the scientific validity and potential benefits of Early Treatment. They were also questioned about their alleged responsibility for promoting 'anti-scientific' treatments, as framed by the opposition, or their heroism in saving lives, according to government senators.

[63] Senado (n 54)

[64] Senado N.a., 'Senadores lamentam 500 mil mortes por covid-19; CPI divulga nota' (Senado Federal) https://www12.senado.leg.br/noticias/materias/2021/06/19/senadores-lamentam-500-mil-mortes-por-covid-19-cpi-divulga-nota accessed 1 January 2025

Such specificities were not overlooked by senators or deponents. The statements for and against 'Early Treatment' were often directed to the general audience. Those in support of the prescribed drugs faced frequent reprimands from opposition senators. The 'live-streamed' and 'popular' nature of the CPI was also mentioned as a way to emphasise its importance in the Brazilian political scene.

1.6.3 Data Corpus and Methodology

The timeframe analysed is defined as starting February 2020, when news from the SARS-Cov-2 virus arrived in Brazil from Europe and Asia, to December 2021, after the conclusion of a Parliamentary Investigation into the Federal Government's Covid response.

The data corpus is composed of **four** main sources:

Data Source 1 (Main): Written documents and transcripts from the CPI da Covid.

Comprised of the investigations conducted by the Senate from May to November 2021, including transcripts of oral interrogations of people who participated directly or indirectly in the Federal Government's Covid response. This research focuses on the transcripts of the 20 sessions where with scientific authorities and policy-makers were heard on the scientific-validity and policy actions related to Early Treatment. Testimonials include statements of many members of the anti-scientific network, such as the Ministers of Health, businessman Luciano Hang, Dr Nise Yamaguchi, and others listed in Appendix I.

The CPI investigation also compiled important documents, such as social media declarations and videos from each of these actors and official documents produced by

many of the nodes of the network. During the investigation, actors were pressed to justify their policy choices, including discussing whether there was a 'scientific' basis for the Early Treatment. Other documents demonstrate an association of nodes across the network, supporting each other and colluding in favour of Early Treatment.

Data Sources 2 and 3, complementing Data Source 1, including reports and recordings compiled by media and civil society organisations. These include over 100 documents, recorded on social media, national and international newspapers, and official archives that were selected based on their connection to the facts narrated and analysed in the CPI da Covid.

Data Source 2: Official declarations and informal communications from President Bolsonaro and his ministers during the Pandemic. These are the declarations produced by the high-ranking federal government, including addresses to the nation, speeches at the United Nations, and statements at official events. For example, these include the President's declarations at the UN opening speech in the 2020 General Assembly, in September, advocating for the use of chloroquine, and communications through official social media accounts where actors justified the use of 'Early Treatment' drugs. Here, informal communications mean declarations made in contexts that are not considered as a formal exercise of the office, which includes spontaneous declarations to the media, social media communications, and the President's 'live streams' which the former president produced every week from his personal accounts, among others.

Data Source 3: Official documents produced by the organisations that supported the 'Early Treatment' and were influential at a national scale. The documents produced by the most relevant organisations in the network, including the Ministry of Health, National Commission for the Incorporation of New Technologies to the SUS

(CONITEC), the Armed Forces, Prevent Senior, and the Federal Council of Medicine (CFM). These documents have been selected based on the relevance of the organisation in the anti-scientific network and the reliance of the Federal Government on these documents to justify the Early Treatment. For example, testimonies and the CPI da Pandemia's final report point to certain external documents that are worth analysing.

Data Source 4: Two comprehensive interviews with people who worked with the CPI da Covid, in the Senate and managing anonymous social media accounts. These interviews serve to have an account of how the exchanges between the investigation and crowdsource efforts occurred, as analysed in Chapter 9.

1.7 Approach and Overview of the Thesis

This introductory Chapter 1 focused on establishing the context of Brazil's response to the Pandemic, which culminated in the CPI da Covid, and its historical relevance in Brazil's robust public health system. Through an overview of Brazil's political system and public health policy-making structures, this chapter contextualises the institutional design of the public health system in Brazil which was confronted by scientific disinformation during the pandemic. This introductory chapter also provides a first reference to the conceptual framework for this thesis, a combination of Castells' and Jasanoff's ideas, which will be expanded upon in Chapters 2 and 4.

Chapter 2 develops the theoretical framework by engaging with Manuel Castells' Network Society Model. Through examination of Castells' conceptualisation of power and communication, particularly his distinction between network, networking, and networked power, Chapter 2 establishes the analytical tools needed to understand how networks generate legitimacy. This theoretical foundation demonstrates how the

Brazilian case represents a departure from traditional Habermasian models of democratic deliberation in public policy-making.

Chapter 3 lays out the chapter history of the SUS and its construction as an institution that is highly democratic. Conceived with spaces where civil society and experts can influence the governance of this institution, the influence the SUS suffered from the anti-scientific network makes it an interesting case study and bridge between Castells' and Jasanoff's works.

Chapter 4 extends the theoretical framework by incorporating Sheila Jasanoff's concepts of co-production and regulatory science, alongside Foucauldian discourse analysis. This theoretical synthesis enables examination of how scientific authority is used to sustain legitimacy of institutional structures. Chapter 4 explores how spaces of scientific 'co-production' within healthcare bureaucracy become sites where boundaries between scientific and political authority are negotiated and challenged.

Chapter 5 outlines the methodology and research design of this thesis, which combines Jasanoff's and Castells' conceptual frameworks for analysing the anti-scientific network's advocacy for Early Treatment. Through qualitative analysis of the CPI da Covid proceedings, supplemented by an analysis of media reports, official communications, and targeted interviews, the chapter discusses how each concept will be applied in the following chapters that present data analysis.

Chapters 6 through 9 are data analysis chapters. They are designed to respond to the research questions set out earlier in this chapter. I will address the research questions following the reasoning outlined below:

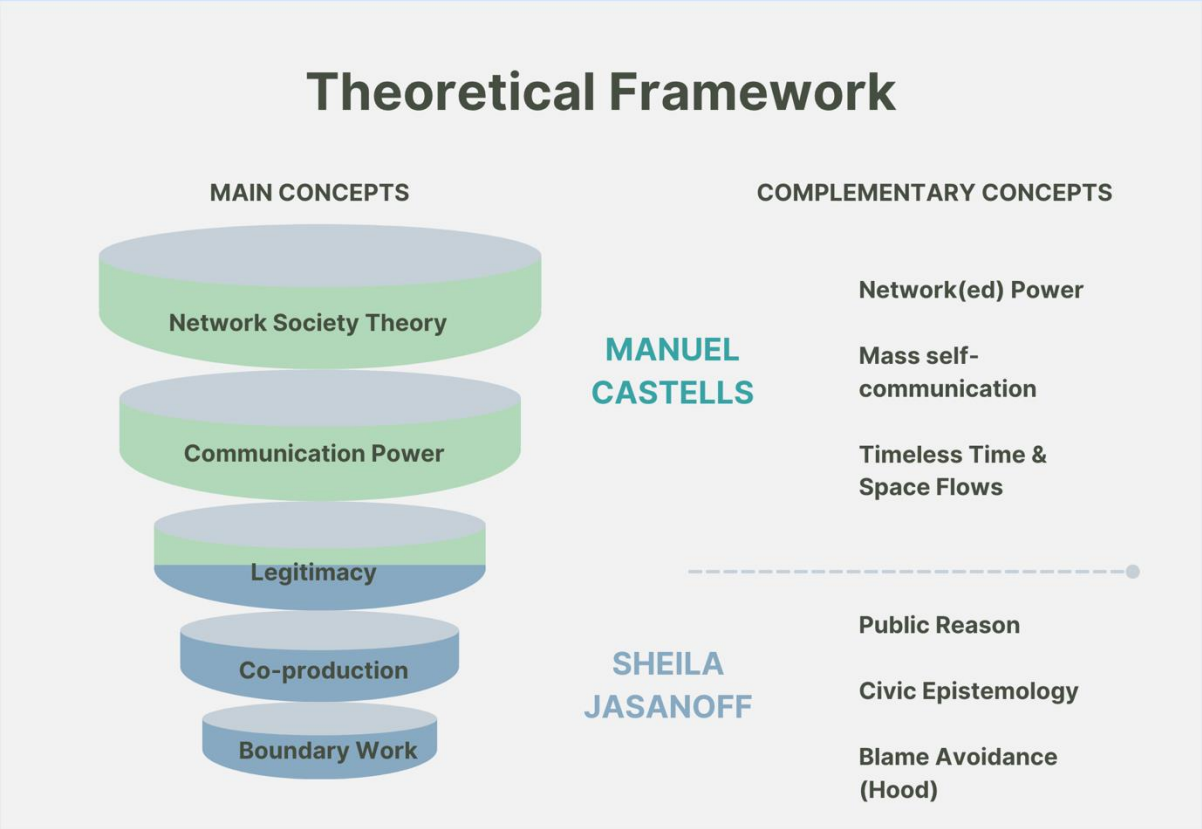


Image 3: Diagram illustrating the funnelled approach of this thesis, with Castells' network theory as the overarching methodology and Jasanoff's concepts as analytical tools.

Chapter 6 maps the composition and structure of the anti-scientific network based on evidence from the CPI da Covid Final Report. It identifies key actors (nodes) and their roles in disseminating 'Early Treatment' disinformation, directly answering Sub-RQ 1 about how the CPI reconstructed this network and its discourses.

Chapter 7 analyses how the network constructed and contested scientific legitimacy. Using Sheila Jasanoff's concepts of boundary-work and public reasoning, it examines CPI testimonies and documents to show how scientific arguments were strategically manipulated to legitimise Early Treatment, addressing Sub-RQ 2.

Chapter 8 explores the strategies of blame avoidance employed by political figures within the anti-scientific network. It analyses how key actors used ambiguous and

conflicting discourses to evade accountability for their promotion of ineffective treatments, directly addressing Sub-RQ 2 and partially addressing Sub-RQ 3.

Chapter 9 examines the role of social media and communication technologies in the mobilisation and counter-mobilisation around 'Early Treatment' advocacy. It investigates how networked forms of communication power enabled widespread adoption of anti-scientific discourse, as well as how these same networks were leveraged by the CPI to counteract misinformation, directly answering Sub-RQ 3 and Sub-RQ 4.

Finally, Chapter 10 synthesises these insights and examines their broader implications, particularly focusing on the challenges posed to scientific authority, public health institutions, and democratic governance in the context of networked power dynamics. It outlines policy recommendations informed by the Brazilian case and reflects on strategies to safeguard democratic and scientific integrity from similar future threats

1.8 Research Contributions

The interdisciplinary nature of this thesis stands at the crossroads of science and technology studies, law, political science, and communication studies, offering a multifaceted view of the role of scientific discourse and networked communication in shaping political actions and public policy. This approach is crucial for a comprehensive understanding of the challenges faced by modern societies.

Here, I explore the struggle of power that materialised in the disputes over the scientific validity of the 'Early Treatment' as a response to Covid in Brazil. The study highlights how a network, led by key political figures and supported by various actors, including health professionals and institutions, propagated an anti-scientific discourse to

legitimise the use of ineffective treatments against Covid. This discourse, characterised by a mix of denial, distortion, and selective appropriation of scientific information, played a crucial role in shaping public opinion and policy.

The thesis demonstrates the impact of this networked mobilisation on public health and scientific institutions, emphasising how it undermined the credibility of established authorities like the WHO and the SUS in the country. By applying Manuel Castells' framework of the network society, the research delves into the dichotomy and interaction between networked and institutional power. I show how networked power, leveraging the flexibility and reach of information and communication technologies, challenged and sometimes overrode traditional institutional mechanisms in public health policy-making.

This thesis contributes to the academic literature by combining and expanding the seminal concepts of Manuel Castells and Sheila Jasanoff, particularly in relation to co-production, boundary-work, and network society theory, alongside an examination of the tensions between various forms of power, networked power and institutional power.

In the domain of Jasanoff's co-production, the thesis applies this concept to the tangible context of a pandemic response, where scientific knowledge and governmental policy are inextricably linked and continuously evolving. This application not only validates Jasanoff's theoretical framework but also expands upon it, offering a deeper understanding of how science and policy influence each other, especially under crisis conditions. Doing so demonstrates the interactions between scientific understanding and public health policies within a complex societal fabric, influenced by an array of actors within a network. This nuanced portrayal of co-production in action, particularly in a high-stakes public health scenario, extends the framework beyond its traditional

applications, showcasing its relevance and adaptability to contemporary global challenges.

The thesis also makes contributions to the concept of boundary-work. It explores the negotiations and disputes over the boundaries between science and non-science within a highly charged political landscape. This exploration sheds light on how political actors and networks can actively engage in reshaping these boundaries to advance their agendas, impacting public perception and policy in profound ways. This analysis is especially relevant in an era where the authority of science is often contested by various social and political forces, especially using the wide-reaching audience of social media, making the thesis' contributions critical to understanding the current global dynamics of information production, validation, and circulation and its connection to political power.

Concerning the broader network theory from Castells', the thesis provides a concrete application of theoretical network concepts to a concrete real-life networked social movement. This empirical exploration contributes to Castells' network society theory by illustrating how digital communication networks and networked forms of mobilisation can significantly influence policy-making, challenging and transforming traditional institutional processes.

Furthermore, the thesis illustrates the tensions between networked and institutional power as outlined by Castells. It exemplifies the complex interactions between these forms of power, particularly in contexts where public policy and opinion are at the forefront. The nuanced analysis of how networked power challenges, and is sometimes co-opted by, institutional power deepens the understanding of power dynamics in the digital age, offering a nuanced perspective on contemporary power struggles.

Lastly, the implications of this thesis pave the way for further exploration of the role of networks in shaping public discourse and policy, particularly during crises. For policy-makers, the findings underscore the need for robust mechanisms to protect scientific integrity and public welfare against the backdrop of complex networked power dynamics.

In summary, this thesis not only contributes to the deeper academic understanding of Jasanoff's and Castells' theories but also provides an essential lens through which to examine the interplay of science, politics, and networked communication in the contemporary world. It highlights the importance of analysing the co-production of scientific knowledge and public policy within the intricate web of societal networks and power structures.

Chapter 2

The Network Society and Scientific Disinformation: A Castellian Framework for Understanding Covid Misinformation in Brazil

2.1 Introduction: Disinformation as Power in the Network Society

While existing scholarship treats scientific disinformation primarily as a problem of false information or media manipulation, this chapter advances a theoretical

framework that conceptualises it as a form of networked power. Drawing on Manuel Castells' theory of the network society, I argue that an anti-scientific network in Brazil during the pandemic was able to effectively challenge public health institutions not simply by spreading misinformation, but by leveraging the unique properties of networked communication to build alternative sources of authority and legitimacy. of scientific authority while operating largely outside traditional policy-making structures.

This chapter develops a theoretical framework for understanding how informal networks promoting 'Early Treatment' successfully challenged established public health institutions and scientific authority during Brazil's Pandemic. While existing approaches to studying disinformation offer insights into specific aspects of this phenomenon, this chapter argues that Manuel Castells' theory of the network society provides a more comprehensive framework for understanding how anti-scientific networks can effectively challenge institutional authority.

First, I present key concepts from Castells' network society theory – particularly networked power, communication power, and the transformation of space and time. I show how these concepts provide useful descriptions of the tension between networks and institutions in scientific communication. Second, I examine existing approaches to studying disinformation, discussing their limitations in explaining how informal networks can successfully challenge institutional authority. Third, I apply this theoretical framework specifically to scientific disinformation, demonstrating how anti-scientific networks leverage networked properties to bypass traditional gatekeepers, such as CONITEC and ANVISA, and establish alternative sources of authority. Finally, I analyse Brazil's unique technological and social context, showing how specific features of its media environment – particularly the prominence of WhatsApp and high social media usage – created favourable conditions for anti-scientific networks to challenge public health institutions.

The chapter proceeds in four main sections. First, it examines existing approaches to studying disinformation, establishing the need for a more comprehensive theoretical framework (2.2). Second, it presents key concepts from Castells' network society theory, including networked power, communication power, and the transformation of space and time (2.3). Third, it explores how these concepts explain the tension between networks and institutions in scientific disinformation (2.4). Finally, it analyses Brazil's unique context that shaped how scientific disinformation circulated during the pandemic (2.5).

Castells' framework, presented in detail in the next section, directly informs my subsequent analysis of how Brazil's anti-scientific network accumulated enough power to effectively paralyse and manipulate public health institutions during the Pandemic.

2.2 Networks and Political Change: A Castellian Framework

To understand how anti-scientific networks could effectively challenge public health institutions, we must first explore the fundamental transformation in social organisation that Castells identifies. His network society theory provides key concepts that explain how informal networks can accumulate and exercise power even while operating outside traditional institutional structures.

At its core, Castells defines a network as a set of interconnected nodes – whether individuals, organisations, or technological platforms – linked through relationships that facilitate flows of information and influence. According to Castells,[65] the information society has greatly increased networked social coordination, resulting in a shift that

[65] Manuel Castells, 'Materials for an Exploratory Theory of the Network Society' (2000) 51 The British Journal of Sociology 5.

affects not only culture but also politics. The author posits that 'the virtuality of this text [electronic hypertext] is in fact a fundamental dimension of reality, providing the symbols and icons from which we think and thus exist'.[66] In politics, this refers to the way the media has become the space of debate and mobilisation, and how even the state in the information age has to resort to networks.

The theory of the network society states that the intense use of telecommunications enhances the capacity of networks. Networks are constituted of actors contributing through shared discourse towards a similar goal ('programme'), to mobilise and achieve political results outside of existing institutional mechanisms of political participation.[67] Castells explains that this form of highly mediatised politics alters the incentives and strategies used by political actors. These actors now rely more on means of mass communication and mass self-communication, explained in detail in Chapter 6, facilitated through interactive social media platforms with user-generated content. Their messages can now achieve a potential mass audience, taking advantage of the reach and distribution services of social media providers to mobilise networks for social and political change.

In this sense, the rise of the network society creates tensions between networks and institutions, including within the space of democratic governance. This is a major implication of Castells' theory that will be explored and tested in this thesis. Such dynamics change the political sphere of debate and, in a rather positive approach highlighted by Castells, carves out 'new avenues of democratic representation [that] may be opened up by insurgent politics, using the information and communication power that makes it possible to grassroot the networks and to network the grassroots.'[68]

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[66] Manuel Castells, (n 52), p. 13.

[67] Manuel Castells, 'An Introduction to the Information Age' (1997).

[68] Ibid 411

Insurgent politics, to Castells, is the networked mobilisation that seeks the discontinuity with the logic embedded in political institutions. This is how Castells describes the power dispute between forms of power and social mobilisation in the networked society.

Castells' theory of network society provides three key concepts that help explain how anti-scientific networks can effectively challenge institutional authority: (1) the tension between networked and institutional power, (2) the transformation of social movements in digital space, and (3) the mediatization of politics. These concepts are particularly relevant for understanding how networks promoting 'Early Treatment' in Brazil were able to bypass traditional public health institutions. I will expand upon them in the following subsections.

This tension between networked and institutional power was evident in Brazil's pandemic response, where informal networks promoting 'Early Treatment' successfully challenged the authority of established public health institutions. While institutions like CONITEC and ANVISA relied on traditional hierarchical authority and scientific evidence, anti-scientific networks leveraged their fluid boundaries, flexible forms of communication, and reach (i.e. the viral spread of information) to promote alternative narratives in relation to the adequacy and effectiveness of treatments for Covid.

Castells[69] contrasts two forms of power in the context of the network society, distinguishing between networked power and institutional power. By networked power, Castells refers to the power that arises from the networks of information and communication technologies. This form of power is characterised by its flexibility, adaptability, and global reach. In a networked society, power is increasingly decentralised, flowing through complex connections between diverse actors. It relies on the ability to connect and control communication networks, thereby influencing how

[69] Ibid 47-50

information is disseminated and consumed. Networked power is not tied to traditional institutions; rather, it emerges from the capacity to create and manage connections within the global network.

Institutions, as defined by Castells, are stable and socially recognised patterns of behaviour or structures essential for societal functioning. They encompass various organisations and systems of norms, values, and rules that guide both individual and collective behaviour. These institutions are characterised by their durability, functionality, and the power structures they embody and reflect within society. In this context, Castells engages with classical concepts of democratic theory while maintaining his focus on their embeddedness in power relations and networks, rather than adopting a purely normative perspective.

In this sense, institutional power refers to the traditional form of power that is exercised through established bureaucratic institutions such as governments and corporations. For Castells, this form of power is more hierarchical and is based on controlling resources, enforcing laws and regulations, and maintaining established societal and organisational structures. Institutional power is often associated with formal authority and is exercised in more predictable and structured ways.

Castells claims that these two forms of power are in a state of concurrent opposition and interplay with each other. On the one hand, networked power challenges institutional power by enabling new actors to gain influence outside traditional hierarchical structures. It allows for more horizontal forms of organisation and communication, which can undermine or bypass established institutions. On the other hand, institutional powers often seek to harness and control networked power for their own ends, such as governments and corporations investing in and regulating digital technologies and media.

However, in the network society, institutional power is also transformed by the dynamics of networked power. Institutions increasingly adopt networked forms of organisation and communication to maintain their relevance and control. One of Castells' references is Jürgen Habermas's definition of the democratic state, which uses institutions to enable a society to self-govern. According to Habermas, institutions are mediating mechanisms through which the lifeworld (culture, norms, values) interacts with the system (economy, state)[70]. By emphasising communicative action in building the legitimacy of institutions within a democratic state, Habermas provides Castells[71] with a framework to highlight how institutional stability is predicated on the capacity to articulate different interests and values in the democratic process via communication networks', connecting the civil society and state action by enlarging the role of a public sphere.

The interplay between these two sources of power in a networked society can be seen in how political campaigns, corporate marketing, and even social movements have shifted their strategies to leverage digital networks. As I will demonstrate throughout this thesis, especially in Chapters 5 and 9, the CPI da Covid has been an interesting case of opposition and interplay between networks and institutions disputing the use of 'Early Treatment' as a response to the Pandemic in Brazil.

[70] Jürgen Habermas, *The Theory of Communicative Action: Volume 1: Reason and the Rationalization of Society* (T McCarthy trans, Beacon Press 1984).

[71] Castells (n 52) 12

2.3 The Implications of networked disinformation according to Castells' theory

2.3.1 Network Society and Communication Power

Castells[72] defines the network society as a social structure characterised by 'networks powered by microelectronics-based information and communication technologies'. This paradigm shift from industrial society to network society has profound implications for how information, including scientific knowledge and disinformation, is produced, disseminated, and consumed.

The network society is characterised by the pervasive use of information technologies on all spheres of social activity. Castells argues that these technologies do not merely facilitate existing social processes but fundamentally reshape them. In this context, the concept of communication power becomes central. Castells[73] posits that power in the network society is primarily exercised through 'the construction of meaning in people's minds' meaning a process of collective construction of discourse towards a given goal – which occurs largely through communication networks.

The theoretical significance of the network society concept lies in its ability to explain the transformed nature of social interactions and power dynamics with the advent of the internet. It provides a framework for understanding how information flows across society, how different actors compete for influence, and how traditional institutions are challenged by networked forms of organisation.

We can see these forces at play when President Jair Bolsonaro is prevented by the Brazilian Supreme Court (STF) from commanding state and municipal level health

[72] Castells (n 65)

[73] Manuel Castells (n 52) 3

policy,[74] but is able to participate in disinformation discourse that gets large portions of the Brazilian population to consume or believe in the effectiveness of 'Early Treatment' drugs. For instance, in May 2021, a survey by the Datafolha Institute[75] found that one in four Brazilians explicitly reported using drugs from the so-called Covid kid, with higher rates between Bolsonaro supporters. In 2020[76], amid the initial debates surrounding chloroquine's alleged curative properties, 89% of respondents stated that physicians – not politicians – were the appropriate authorities to decide on Covid treatments. By 2021, an online survey conducted by the Associação Médica Brasileira (AMB)[77] pointed that one-third of the physicians interviewed still believed chloroquine was effective against Covid.

Although Castells argues for this nearly hegemonic power of networks, Jan van Dijk78 suggests that while networks are indeed becoming the dominant form of social organisation, they do not completely replace traditional social structures. Van Dijk's perspective reminds us to consider the persistence of hierarchical and bureaucratic forms alongside networked structures, particularly relevant when examining scientific institutions and their role in public discourse. Castells acknowledges the relationship between institutions, ultimately the state, and discourse in the concept of the 'networked

[74] In Chapter 3, the Bolsonaro administration sought to centralize social distancing authority at the federal level early in the pandemic. This led the opposition to file ADI 6341/2020, challenging its constitutionality. The ruling reaffirmed Brazil's federative principles, upholding state and municipal authority over health measures: https://redir.stf.jus.br/paginadorpub/paginador.jsp?docTP=TP&docID=754372183.

[75] Everto Lopes Batista, 'Um Em Cada Quatro Usou Remédio Para Tratar Precocemente Ou Prevenir Covid-19, Mostra Datafolha - 19/05/2021 - Equilíbrio e Saúde - Folha' políticos' (Folha de S.Paulo, May 2021) https://www1.folha.uol.com.br/equilibrioesaude/2021/05/um-em-cada-quatro-usou-remedio-para-tratar-precocemente-ou-prevenir-covid-19-mostra-datafolha.shtml accessed 2 January 2025

[76] Folha de SP N.a., 'Para 89%, uso da cloroquina contra Covid-19 é decisão de médicos e não de políticos' (Folha de S.Paulo, 19 April 2020) https://www1.folha.uol.com.br/equilibrioesaude/2020/04/para-89-uso-da-cloroquina-contra-covid-19-e-decisao-de-medicos-e-nao-de-politicos.shtml accessed 2 January 2025

[77] Leticia Nogueira, 'Covid-19: 1/3 dos médicos acredita na cloroquina como tratamento precoce' (Olhar Digital, 3 February 2021) https://olhardigital.com.br/2021/02/03/coronavirus/covid-19-pesquisa-um-terco-medicos-acreditam-cloroquina-tratamento-precoce/ accessed 2 January 2025

[78] Jan van Dijk, *The Network Society* (3rd edn, Sage 2014)

state,' where even institutional power becomes integrated into a 'complex web of power-sharing'.[79] In other words, even the institutions have to conform, adapt and seek out networked power if they want to be able to influence social behaviour. In the context of scientific institutions, this helps explain how anti-scientific networks could *scientifically* challenge public health institutions while operating largely outside traditional policy-making channels, as well as the ultimate need to the CPI to resort to social media networks.

For Castells, the network society operates in a 'networked public sphere' – a space where public discourse and debate occur through interconnected digital networks rather than traditional institutional channels. This transformation of the public sphere is crucial for understanding how scientific authority operates in contemporary society.

Unlike the traditional public sphere model where institutional voices dominated, the networked public sphere enables multiple actors to compete for attention and credibility, often bypassing traditional gatekeepers of scientific knowledge, such as universities and governmental expert bodies. Although Castells initially framed these structural changes in a largely positive light, emphasising the potential for new, decentralised, and participatory forms of power, his more recent theoretical work acknowledges the negative implications of these changes.[80] Over time, Castells has recognised the darker side of this transformation, arguing that the networks facilitating human activities could also be used to undermine society's foundations. For him, the rapid growth of disinformation, the disruptive nature of social media, and the reinvention of the national state are phenomena that, although inserted in his general theory, deviated from his original predictions.

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[79] Castells (n 52)

[80] Castells M, 'The Network Society Revisited' (2023) 67 American Behavioral Scientist 940

Thus, Castells[81] observes that, alongside the liberating movements enabled by networked technologies, a 'Pandora's box' has been opened, bringing with it the spread of social and democratic movements, but also enabled the spread and articulation of less democratic groups . In such, he briefly mentions negative contributions of practices that he does not characterise as counter-social movements, but generators of chaotic turbulences that decompose traditional authorities that, even with limitations, were important for the quality and structuring of society information systems. Some examples are the traditional authority of professional journalism, science, as well as the election of facts and reason as guiding principles for human action.

In the context of scientific disinformation, the network society framework helps explain the structural political change in governance, where political solutions can obtain 'scientific' validation from sources outside established scientific institutions. The paths and bodies for fact production and a societal sense of 'objectivity' are altered because of disinformation. As a result, current public health institutions face tensions with the anti-scientific network stemming from the spread of false or misleading information. The same network structures that facilitate the dissemination of scientific knowledge also enable the propagation of misinformation, and also enable people to mobilise towards shared, sometimes insurgent, political goals.

These transformations, Castells argues, have profound implications for how institutions maintain their authority and legitimacy in society. As networks enable new forms of communication and coordination outside traditional hierarchies, established institutions face unprecedented challenges to their authority. This is particularly evident in how scientific and public health institutions struggled to maintain their legitimacy

[81] Ibid

during the Pandemic when confronted with alternative narratives spreading through digital networks.

2.3.2 Legitimation and Institutions in the Network Society

The relationship between institutional power and legitimacy is a key aspect of Castells' network society theory. In the network society, traditional institutions, including those of science and governance, face new challenges to their authority. Castells[82] argues that networked forms of communication and organisation often challenge established ones, leading to a crisis of legitimacy for many traditional power structures.

This concept of legitimacy is particularly relevant when examining the role of scientific institutions during the Pandemic. The tension between institutional scientific knowledge and alternative narratives spreading through digital networks exemplifies the legitimation challenges the state faces, as described by Castells. Scientific institutions found themselves competing for public trust against a backdrop of rapidly spreading misinformation and conspiracy theories.[83]

Scott Lash's[84] 'Critique of Information' further enriches this discussion by exploring the 'informationalisation' of institutions. Lash argues that in the information age, institutions themselves become more like networks, blurring the distinction between institutional and networked forms of organisation. This perspective helps explain how scientific institutions have had to adapt their communication strategies to remain relevant and maintain legitimacy in a networked public sphere. This will be relevant in

[82] Manuel Castells, The Rise of the Network Society (2nd edn, Wiley-Blackwell 2010) vol 1, Information Age Series

[83] Caio Vieira Machado et al., 'Scientific [Self] Isolation: International Trends in Misinformation and the Departure from the Scientific Debate', Report, (Laut, 2020b) https://laut.org.br/wp-content/uploads/2020/11/Political-Self-Isolation-vF.pdf accessed 15 December 2023

[84] Scott Lash. (2002) *Critique of Information* (London: Sage).

Chapter 9, where the CPI's response and reliance on the internet are analysed as a reaction.

Castells' work is nuanced by Saskia Sassen's[85] writings on global networks and local realities. Sassen emphasises the continued importance of place and local contexts, even in a highly networked world. WE can use this concept to analyse the pandemic response in Brazil. The disinformation circulating around the world took its own form within the Brazilian context, as narrated in the rise of the 'Early Treatment' agenda in Chapter 1. Taking this a step further, even within the Brazilian context, the disinformation was not exactly the same in each region and city, but shared a common national discourse.[86] This thesis focuses on the most influential nodes of the network, influencing the agenda in the whole country.

This crisis of institutional legitimacy is linked to another key transformation in the network society: the mediatisation of politics. As institutions struggle to maintain their authority, they must increasingly engage in media spaces where political discourse and power relations are now primarily negotiated. The shift of political deliberation and institutional authority into mediated spaces represents what Castells identifies as a fundamental change in how power operates in the network society. This is particularly evident in how anti-scientific network during the Pandemic managed to occupy spaces of attention and credibility in a media environment dominated by social platforms, viral content, and alternative narratives.

[85] Saskia Sassen, *A Sociology of Globalization* (WW Norton & Company 2007).

[86] Julie Ricard and Juliano Medeiros, 'Using Misinformation as a Political Weapon: COVID-19 and Bolsonaro in Brazil' (2020) 1 Harvard Kennedy School Misinformation Review https://misinforeview.hks.harvard.edu/article/using-misinformation-as-a-political-weapon-covid-19-and-bolsonaro-in-brazil/ accessed 4 January 2025

2.3.3 Mediatisation of Politics and Public Discourse

The mediatisation of politics is a key concept in understanding how the network society affects political processes and public discourse. Castells[87] argues that the media, particularly mass self-communication, have become 'the space where power relationships are decided between competing political and social actors.' This mediatisation process has profound implications for how scientific information and disinformation are communicated and perceived by the public.

In the context of Brazil's response to the Pandemic, the mediatization of politics played a crucial role in shaping public perception and policy responses. Social media platforms became key battlegrounds where different narratives about the virus, its severity, and appropriate responses competed for public attention.[88] This dynamic exemplifies what Andrew Chadwick[89] terms the 'hybrid media system,' where older and newer media logics interact in complex ways.

For Castells[90], media politics in the digital age was already characterised by the 'interaction between mainstream media and the Internet',[91] where traditional media had a stronger level of control of entry and access, filtered by editors, advertiser, owners and professional journalists, for instance. The internet, on the other hand, was available for any one, consisting on a 'domain of choice for unsupervised messages that broaden the

[87] Castells (n 52) 194

[88] Felipe Soares and Raquel Recuero, 'How the Mainstream Media Help to Spread Disinformation about COVID-19' (2021) 24 M/C Journal https://journal.media-culture.org.au/index.php/mcjournal/article/view/2735 accessed 27 October 2023.

[89] Andrew Chadwick, *The Hybrid Media System: Politics and Power* (2nd edn, Oxford University Press 2017).

[90] Castells (n 52)

[91] Ibid 234

scope of sources of information and misinformation, trading lesser credibility for greater diversity'.[92]

Zizi Papacharissi[93] offers a more nuanced perspective on online political participation in networked society. She argues that while digital platforms offer new opportunities for engagement, they also lead to a more privatized form of citizenship. This view challenges the notion that increased connectivity necessarily leads to more democratic or informed public discourse, a consideration particularly relevant when examining the spread of scientific disinformation through 'personal'[94] networks on platforms like WhatsApp in Brazil.[95]

The mediatization of politics poses particular challenges for scientific communication in three key ways. First, the logic of media platforms, which prioritizes engagement and virality, often conflicts with the methodical, nuanced nature of scientific discourse. Scientific findings that require careful contextualization must compete with simplified, emotionally resonant content for public attention. Second, the accelerated pace of media cycles clashes with the turnaround cycles of scientific research and peer review, creating pressure to communicate preliminary findings before thorough verification. Third, social media's emphasis on personal narratives and experiential knowledge can undermine the authority of institutional expertise, as anecdotal evidence

[92] Chadwick (n 89)

[93] Zizi Papacharissi, *A Private Sphere: Democracy in a Digital Age* (PoliPointPress 2010).

[94] Bolsonaro and his allies exploited encrypted messaging apps like WhatsApp and Telegram for mass communication. They leveraged features such as group channels and message forwarding to create a de facto broadcast system. Piaia V and Alves M, 'Abrindo a Caixa Preta: Análise Exploratória Da Rede Bolsonarista No WhatsApp' (2020) 43 *Intercom: Revista Brasileira de Ciências da Comunicação* 135; Soares et al., 'Research Note: Bolsonaro's Firehose: How Covid-19 Disinformation on WhatsApp Was Used to Fight a Government Political Crisis in Brazil' https://dash.harvard.edu/handle/1/37367207 accessed 3 January 2025.

[95] Gustavo Resende et al., 'Analyzing Textual (Mis)Information Shared in WhatsApp Groups', Proceedings of the 10th ACM Conference on Web Science (ACM 2019) https://dl.acm.org/doi/10.1145/3292522.3326029 accessed 4 January 2025

and individual testimonies gain equal or greater visibility than systematic scientific studies.[96] These factors will be unpacked further in Chapter 7 and 8.

These dynamics of mediatized political communication led me to examine how information actually flows through networks, and how these flows can either reinforce or challenge institutional authority. While mediatization describes the broader transformation of political communication, understanding the specific mechanisms of information flow –including the spread of misinformation and the emergence of counterpower – is crucial for analysing how anti-scientific networks could effectively challenge public health institutions during the pandemic.

2.3.4 Information Flows, Misinformation, and Counterpower in Networks

Castells' analysis of information flows in networks are useful tools to understand structural and operation aspects of the anti-scientific network, that was loosely connected all over the country (and in the world), and somehow still managed to produce a cohesive discourse that affected the population. This fluidity is a critical aspect to understand the difficulty institutions have in holding the nodes of the network to account while they were able to flood the internet with disinformation and misinformation.

Within a network, each member 'node' participates to the extent they share the discourse ('construct the same meaning') as the network. For the anti-scientific method in Brazil, this could be simply reposting Covid disinformation to actively producing bogus science all the way to promoting the dismantling of Anvisa. Castells emphasises

[96] Misinformation, disinformation, and science-related challenges have long been studied, particularly after Covid-19. Wang et al. (2019) found that health misinformation on social media often links diseases and vaccines to rhetorical and personal arguments, including testimonials. West and Bergstrom (2021) showed that emotional, anecdotal claims spread more easily online, influencing both public engagement and scientific communication. Wang Y et al., 'Systematic Literature Review on the Spread of Health-Related Misinformation on Social Media' (2019) 240 *Social Science & Medicine* 112552; West JD and Bergstrom CT, 'Misinformation in and about Science' (2021) 118 *Proceedings of the National Academy of Sciences* e1912444117.

the role of nodes and hubs in information distribution, explaining how certain actors or platforms can disproportionately influence the flow of information through networks.[97]

Castells' concepts of 'space of flows' and 'timeless time' are central to understanding how the network society transforms our experience and organisation of time and space. Castells[98] defines space of flows as 'the material organisation of time-sharing social practices that work through flows', while timeless time refers to a 'systemic perturbation in the sequential order of phenomena performed'. In this context, Castells dialogues with and contributes to broader sociological reflections on the nature of time and space in accordance with the rise of new forms of transport and communication, drawing on seminal works such as the ones of David Harvey and Anthony Giddens.

David Harvey's work on time-space compression offers a detailed perspective. Harvey[99] argues that technological innovations have led to a shrinking of spatial and temporal horizons, accelerating social processes. Over the following chapters, this perspective will also be evident in the empirical analysis of 'Early Treatment' and Covid in Brazil, which was marked by the rapid circulation of information, misinformation, and disinformation. Anthony Giddens' theory of 'time-space distanciation' provides another lens for understanding these dynamics. Giddens[100] describes how modern social systems stretch time-space, allowing for interactions across large distances and time periods. This allows for diffuse, dispersed networks to operate important political and institutional changes in the country, as demonstrated by the interactions between the main nodes of the anti-scientific network.

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[97] Castells (n 52)

[98] Castells (n 52) 442-494

[99] David Harvey, *The Condition of Postmodernity*: An Enquiry into the Origins of Cultural Change (Blackwell 1990).

[100] Anthony Giddens, *The Consequences of Modernity* (Polity Press 1990).

Castells[101] argues that the network society brings about profound cultural transformations, shaping 'social practices of communication and, therefore, culture as a whole.' This cultural shift has significant implications for how scientific information is produced, disseminated, and received. With the rapid production and access to opinions or alleged information through mass-self communication, particularly via the Internet, this possibility alters how citizens perceive science and interact with authority. The empirical analysis conducted demonstrates how the spread of misinformation that contradicted official national and international information, on one hand, and the attempt to influence the CPI da Covid through seemingly direct interactions with Senators on Twitter, on the other, reveals how this cultural shift affects citizens' perceptions of and engagement with institutions and political actors.

Henry Jenkins' work on participatory culture offers insights into how the internet and the network society has transformed the relationship between producers and consumers of information. Jenkins et al.[102] describe a media environment where audiences actively participate in creating and spreading content. While this participatory culture can democratize information flows, it also creates challenges for maintaining the authority of scientific institutions and expertise.

These concepts have implications for the spread of scientific information and misinformation. The instantaneous nature of digital communication allows for rapid dissemination of information across global networks, but it also compresses the time available for verification and reflection. The latter is particularly relevant to my empirical case study of the mobilisation of an anti-science network in Brazil in support of the 'Early Treatment' option.

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[101] Castells (n 52) 370

[102] Henry Jenkins, Sam Ford and Joshua Green, Spreadable Media: Creating Value and Meaning in a Networked Culture (New York University Press 2013).

The concept of 'viral' information spread developed by Karine Nahon and Jeff Hemsley,[103] while not originated by Castells, fits well within his network society framework. I will expand on key aspects of disinformation in the following subsection, but the idea of virality is a key notion in connecting Castells' ideas to the study of disinformation. This concept helps explain how certain types of information, including scientific misinformation, can rapidly proliferate through social networks.[104] This phenomenon was particularly evident during the Pandemic, where misinformation about the virus and potential treatments spread rapidly across social media platforms, causing a worldwide problem around what was accurate information about the Covid disease.[105]

Virality was one of the aspects that the anti-scientific network exploited in social media to oppose institutional power. Castells introduces the concept of 'counterpower' in networks, describing how marginalised groups or alternative viewpoints can gain traction through networked communication. While this concept is often viewed positively in the context of social movements, it also helps explain how fringe scientific views or conspiracy theories can gain prominence. In the case of Covid in Brazil, we saw how alternative narratives about the virus, often contradicting scientific consensus, gained significant followings through social media networks. For example, we can look at research by Machado & Konopacki;[106] Galhardi et al.;[107] and Pennycook et al.[108] who

[103] Karine Nahon and Jeff Hemsley, *Going Viral* (Polity Press 2013)

[104] Soroush Vosoughi, Deb Roy and Sinan Aral, 'The Spread of True and False News Online' (2018) 359 Science 1146.

[105] Elia Gabarron, Sunday Oluwafemi Oyeyemi and Rolf Wynn, 'COVID-19-Related Misinformation on Social Media: A Systematic Review' (2021) 99 Bulletin of the World Health Organization 455.

[106] Caio Machado and Marco Konopacki, 'Poder computacional : automação no uso do WhatsApp nas eleições : estudo sobre o uso de ferramentas de automação para o impulsionamento digital de campanhas políticas nas eleições brasileiras de 2018' (ITS Rio, 2019) http://bibliotecadigital.tse.jus.br/xmlui/handle/bdtse/5550 accessed 4 January 2025.

[107] Cláudia Pereira Galhardi et al., 'Fake news e hesitação vacinal no contexto da pandemia da COVID-19 no Brasil' (2022) 27 Ciência & Saúde Coletiva 1849.

[108] Gordon Pennycook et al., 'Beliefs About COVID-19 in Canada, the United Kingdom, and the United States: A Novel Test of Political Polarization and Motivated Reasoning' (2022) 48 Personality and Social Psychology Bulletin 750.

have mapped disinformation in Brazil, Canada and the UK, discussing their large-scale reach in society.

In Yochai Benkler's[109] work 'The Wealth of Networks' the author argued that the 'networked information economy' would ultimately bring facilitated information exchange that would improve democratisation processes. Benkler defines the networked information economy as a decentralised system of information production and exchange, distinguished by the significant role of non-market and collaborative efforts enabled by digital technologies.[110]

His view of the internet economy is characterised by several key aspects. First, decentralisation shifts the control of information production and dissemination away from traditional hierarchical institutions like corporations or governments, empowering individuals, small groups, and communities to play more prominent roles. Second, it emphasises non-market production, exemplified by the rise of peer production – collaborative, voluntary efforts such as open-source software and Wikipedia that operate outside of traditional market incentives or hierarchical structures. Third, advances in digital and communication technologies have democratized tools for creating and sharing information, significantly lowering costs and enabling individuals to participate as producers rather than just consumers. Finally, the networked information economy brings profound social and economic shifts by fostering greater participation in public discourse, enhancing individual autonomy, and challenging traditional business models reliant on proprietary content.

From the data discussed in this thesis, it appears that Benkler's reading of the structural changes in the flow of information were in many aspects accurate. However,

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[109] Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (Yale University Press 2006).

[110] Ibid

these exact predictions converge with Castells' ideas that this empowering of individuals and groups can happen to the detriment of institutions.

This also converges with Christian Fuchs[111] reading that existing power structures and inequalities significantly influence and shape information flows within networks. In his critical analysis of the political economy of digital media, Fuchs emphasises that networks may appear decentralised and egalitarian, but they are often embedded within broader capitalist systems that perpetuate hierarchies of power and control.

This critique is particularly relevant when examining how networks can be directed at producing economic and political power, as well as how socioeconomic factors influence access to and engagement with scientific information in Brazil. The empirical analysis of the Covid case in Brazil shows that economic actors operated in the anti-scientific network in a profitable way, gaining money by selling medical consultations or online courses, in the case of physicians, or by achieving a larger amount of clientele, for private health plans and pharmaceutical companies.[112]

Fuchs claims that corporate dominance over digital platforms centralizes control over information flows despite the decentralised infrastructure of the internet. This could be extended as well to political groups, who manage to assert power over social media communication spaces. This dynamic not only allows powerful actors – such as corporations and governments – to influence or manipulate information but also reproduces existing inequalities in access and participation.

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[111] Christian Fuchs, *Internet and Society: Social Theory in the Information Age* (Routledge 2008).

[112] Poder360, 'Alvo da CPI, Prevent Senior cresceu 14,6% na pandemia' (*Poder360*, 28 September 2021) https://www.poder360.com.br/brasil/alvo-da-cpi-prevent-senior-cresceu-146-na-pandemia/ accessed 5 January 2025.

The TIC Domicílios 2024[113] survey provides evidence of how these broader dynamics manifest in Brazil. Internet access and user behaviour in Brazil are deeply shaped by sociodemographic factors, such as class and race. The survey reveals that Brazilian internet access is predominantly mediated through mobile-only connections, reflecting structural inequalities in digital infrastructure. The most common online activity is sending messages, with limited engagement in verifying online information – only 52% of users answered stating to have checked the accuracy of information they encountered online. Regarding information-seeking behaviours, health emerges as a particularly significant focus, with 51% of users citing it as a primary reason for going online. This figure varies across demographics, ranging from 39% among rural users to 52% among urban users, or and 31% among those with basic schooling to 70% among those with higher education. While the search for health-related information is second only to queries about products and services, these disparities underscore how unequal access and digital literacy affect individuals' ability to navigate critical areas like public health.

Ultimately, the discussion on disinformation and the power of networks from a Castells' perspective can be also understood as an analysis of how networks can mobilise society and political by not only by sharing discourse, but also by shaping the circulation of information, such as determining which views and voices receive exposure in the discussion space. This agrees with Fuchs' readings that access to and participation in digital networks are unevenly distributed, reflecting broader social, economic, and geopolitical disparities. As such, digital networks are not inherently democratic or

[113] CGI.Br. 'Apresentação dos resultados da pesquisa sobre o uso das Tecnologias de Informação e Comunicação nos domicílios brasileiros - TIC Domicílios 2024' (Cetic.br - Centro Regional para o Desenvolvimento da Sociedade da Informação) https://www.cetic.br/pt/publicacao/resumo-executivo-pesquisa-sobre-o-uso-das-tecnologias-de-informacao-e-comunicacao-nos-domicilios-brasileiros-tic-domicilios-2024/ accessed 4 January 2025.

neutral; rather, they are shaped by and reinforce existing power structures and inequalities in ways that impact information production, dissemination, and access.

Understanding how information flows through networks and how counterpower emerges within them naturally leads us to examine the deeper power dynamics that structure these interactions. While networks enable new forms of information flow and resistance to institutional authority, they also create their own power hierarchies and mechanisms of control. Castells argues that power in networks operates through specific mechanisms that determine who can influence network formation and operation. These aspects will be explained in the following subsection and will be at the heart of the analysis of the anti-scientific network presented in Chapter 6. These mechanisms help explain not just how information spreads, but who controls its spread and to what end. In the context of scientific disinformation during the Pandemic, understanding these power dynamics is necessary for understanding how certain actors managed to imprint their agenda onto the anti-scientific network and leverage political power.

2.3.5 Power Relationships and Autonomy in Networks

Nick Couldry[114] offers a critique of what he terms the 'myth of us' in digital networks, challenging the notion that networked communications necessarily lead to collective empowerment. This means that the fragmentation of information sources in the network society can complicate efforts to establish a shared understanding of scientific facts, as seen in the divergent narratives about Covid in Brazil.[115] This questioning is connected to an investigation of who effectively is capable of exercising and expanding power within the network.

[114] Nick Couldry, *Media, Society, World: Social Theory and Digital Media Practice* (Polity Press 2015).

[115] Ricard and Medeiros (n 86)

Castells' analysis of power relationships in networks explains how different actors, including scientific institutions, compete for influence in the digital age. He introduces the concepts of 'programming' (the ability to constitute networks and define their protocols) and 'switching' (the ability to connect and ensure cooperation between different networks) as key mechanisms of power in the network society.[116] These concepts will be further applied in Chapter 6, as they are specifically used to analyse the anti-scientific network around 'Early Treatment' in Brazil.

In the context of scientific communication and disinformation, programming and switching explain how certain nodes can shape the flow of information and influence the behaviour of the entire network. For example, influential figures or organisations, such as the Brazilian Congressman and physician Osmar Terra, who advocated for Early Treatment, may exercise switching power by bridging the medical and the political networks, potentially amplifying or distorting scientific messages.

Castells also explores the tension between individual autonomy and institutional control in networked communications. This tension is particularly evident in the realm of scientific communication, where institutional scientific voices compete with a multitude of individual and alternative sources of information online. This dynamic aligns with what Jasanoff terms the 'co-production of scientific knowledge'[117] where scientific authority is negotiated through complex interactions between institutions and individuals. In the network society, traditional scientific institutions no longer hold exclusive authority over knowledge production and validation. Instead, as Jasanoff observes, scientific claims are increasingly validated through what she terms 'civic epistemology' – culturally specific ways of knowing that emerge through public discourse and debate. This transformation of scientific communication reflects what Jasanoff

[116] Castells (n 52) 45

[117] Sheila Jasanoff, *Science and Public Reason* (Routledge 2013).

describes as the 'democratization of expertise' where networked communications enable new forms of authority to emerge and challenge institutional scientific consensus[118]. The core of Jasanoff's argument and the connections to Castells' model will be discussed in Chapter 4.

In conclusion, Castells' network society theory, along with the critiques and complementary works discussed, provides a robust framework for analysing the complex dynamics of scientific communication and disinformation in the digital age. By understanding the networked nature of contemporary society, the pressured and changing role of institutions, the mediatization of public discourse, and the new power dynamics at play, we can better comprehend the challenges and opportunities for scientific communication in the face of widespread misinformation. This framework is therefore highly explanatory of the dynamics around the promotion of 'Early Treatment' by a fluid anti-scientific network.

2.4 Disinformation as a form of Networked Power

To understand the efficacy of the anti-scientific network in Brazil, it is essential to first situate the phenomenon within the country's particular information ecology. The dynamics of disinformation in Brazil are not a mere replication of those observed in the Global North; they are shaped by a distinct history of media concentration, rapid but profoundly unequal technological adoption, and a political culture that has proven uniquely adept at leveraging the architecture of networked communication. This context helps to explain not only *how* disinformation spread during the pandemic but *why* it found such fertile ground. In Section 2.4 I will present the main concepts and debates around disinformation, and in Section 2.5 I will specify the reality of disinformation in

[118] Sheila Jasanoff, *The Fifth Branch: Science Advisers as Policymakers* (Harvard University Press 1990).

Brazil, analysing the particular ecology of the country and referencing country-specific literature.

The scholarly effort to categorise false and harmful information, notably through Wardle and Derakhshan's concept, presented in section 2.4.2 of 'information disorder', provides a useful vocabulary to distinguish between misinformation, disinformation, and malinformation. However, the Brazilian experience highlights the limitations of such typologies. As scholars like Starbird et al. have noted, determining the intent behind information sharing is often methodologically fraught.[119] In the high-trust environment of WhatsApp groups, a piece of deliberate disinformation created by a political actor can be shared by a family member as well-intentioned (though false) misinformation, blurring these analytical categories. The political efficacy of the content lies not in its origin but in its circulation through these trusted networks.

Much of the debate in disinformation studies has centred on the architecture of social media and its effects on information flows, particularly through the concepts of 'echo chambers' and 'filter bubbles'. This concept and language are presented here in Section 2.4 as they help describe the Brazilian context of disinformation, and the national complexities also shows how these notions are often conflicting and insufficient to describe the entirety of the phenomenon. Brazil is an interesting case study as it adds a layer to this debate. The dynamics of disinformation on WhatsApp are not primarily driven by algorithms but by social curation within closed groups. While these groups can function as powerful echo chambers, their influence stems from social trust rather than technological filtering, a dynamic that standard models of filter bubbles do not fully capture.

[119] Kate Starbird, Ahmer Arif and Tom Wilson, 'Disinformation as Collaborative Work: Surfacing the Participatory Nature of Strategic Information Operations' (2019) 3 Proceedings of the ACM on Human-Computer Interaction 1.

In Brazil, the spread of 'Early Treatment' narratives was not merely a spontaneous contagion but a process amplified by a coordinated network of political actors, doctors, and influencers who leveraged their source credibility. The perceived trustworthiness of these sources, particularly medical professionals, was a key factor in the narrative's success.

The adherence to the 'Early Treatment' narrative in Brazil cannot be read as a mere cognitive error, and needs to be understood more as a product of culture and development in a very specific context. It is an expression of political allegiance to Bolsonaro and distrust in the institutions he opposed. The anti-scientific discourse was effective because it offered a coherent, albeit false, narrative that aligned with the pre-existing political and ideological commitments of a significant portion of the population. Next, I will outline the main concepts which are used in discussing disinformation, to, in the following section, use this language to accurately describe the context and challenges of disinformation in Brazil.

2.4.1 A Working Definition of Disinformation

The concept of disinformation has gained significant attention in academic scholarship in recent years, particularly in the context of social media and political communication. While the term is widely used, its precise definition and implications remain subjects of intense academic debate. Being highly disputed and debated within different disciplines, the term is still convoluted and has unclear boundaries. Additionally, in the last years the expression has also become politically loaded, where its use has been associated to specific political agenda. These factors make its scientific discussion often challenging. Nonetheless, this section presents a working definition for the purposes of the thesis research and justifies its use.

At its core, all definitions of disinformation will encompass the idea of false or misleading information deliberately created and disseminated to deceive.[120] However, this basic definition is too broad for this thesis, which is interested particularly in *scientific* disinformation, especially in the context of online political communication. In this regard, Benkler et al.[121] offer a more relevant definition:

> Disinformation refers to all practices of intentionally creating or disseminating deceptive content to cause harm, sow discord, or create financial and/or political gain. Its practices of deception may range from the decontextualization of known facts to the fabrication of alternative narratives.

This definition highlights several key aspects: intentionality, deceptive nature, harmful or self-serving purpose, and a range of manipulative practices. Some authors specify political interest, however here I will use both the commercial and political gains, as these are often intertwined. As previously mentioned, the 'Early Treatment' in Brazil showed signs of answering to economic factors, where specific companies benefitted from selling 'Early Treatment' drugs and from being excused from delivering expensive treatments. This is relevant, but this thesis focuses primarily on the production of science and its connection with political decision-making.

As one can note from my Research Questions (Chapter 1.4), this research is interested in the interaction between the institutional effects of *scientific* disinformation and the working of public health institutions. The case of the 'Early Treatment' for Covid in Brazil presents a potential side-lining of the decision-making of public health

[120] Don Fallis, 'What Is Disinformation?' (2015) 63 Library trends 401.

[121] Benkler et al. (n 8) 24

institutions in favour of a networked agenda. One way to frame this work is as an analysis of the institutional effects of disinformation, specifically considering their potential impact of undermining mechanisms of deliberative democracy. This research also addresses the question of how the anti-scientific networks' discourse and its mobilisation produced effects that challenge our sense of scientific validity and objectiveness around public health policy and drug effectiveness (RQ 1 and 2). In particular, this thesis analyses the aspects of the communication technologies themselves and how they are relevant to democratic governance to the extent they offered new forms of social organisation and production of knowledge, which will be analysed in Chapter 9 (thereby addressing RQs 3 and 4).

2.4.2 Main branches of disinformation studies

The various approaches to studying disinformation reflect core elements Castells identifies as properties of network society dynamics. We can see these elements manifested in key aspects of disinformation identified in the literature studying this subject. From the viral spread of false information through interconnected nodes to the formation of echo chambers that challenge institutional authority, disinformation exemplifies how networks can mobilise to achieve political outcomes outside traditional channels. Each framework discussed below – information disorder, weaponisation of information, echo chambers, viral spread, source credibility, and cognitive biases – illuminates different aspects of how networked communication transforms the production and validation of knowledge. While these approaches were developed independently of Castells' theory, they describe phenomena that his network society framework helps explain: how digital networks enable new forms of power that can effectively challenge institutional authority, how information flows change in networked environments, and how traditional sources of legitimacy are transformed. Understanding

these different aspects of disinformation is crucial for analysing how anti-scientific networks could effectively challenge public health institutions during Brazil's pandemic response.

In this Section, I will expose the different approaches to and findings on disinformation and lay out the theoretical boundaries of the research on disinformation I am working with. As mentioned before, the definition I have adopted is the one proposed by Benkler et al.[122] This Section will have a dual purpose: first, to locate the literature I am using by acknowledging and distinguishing my references from other ongoing – and equally important – work. Second, this Section also shows that the field is highly interdisciplinary, created by a variety of methodologies and studies, without a concrete established theoretical canon. This discussion is useful to justify my choice of Castells' theory as an overarching framework, where he draws these elements (e.g. studies of technology, communication, politics) into a theory that is able to account for many of these elements.

Information Disorder

The concept of information disorder, introduced by Wardle and Derakhshan,[123] provides a framework for categorising false and harmful information. This framework distinguishes between misinformation (false information shared without intent to harm), disinformation (deliberately created and shared false information), and malinformation (genuine information shared to cause harm). The theoretical significance of this

[122] Benkler et al. (n 8)

[123] Claire Wardle and Hossein Derakhshan, *Information Disorder: Toward an Interdisciplinary Framework for Research and Policymaking*, vol 27 (Council of Europe Strasbourg 2017) http://tverezo.info/wp-content/uploads/2017/11/PREMS-162317-GBR-2018-Report-desinformation-A4-BAT.pdf accessed 4 January 2025.

framework lies in its ability to depict the complexity of context, intention, and veracity of information and the effects of information circulating online.

The information disorder framework is not without its critics. Habgood-Coote[124] argues that the distinctions between these categories can be blurry in practice, potentially oversimplifying the complexity of the multiple paths information takes and the dynamics of information creation and dissemination.

Starbird et al.[125] further complicate the application of this framework by pointing out the difficulty – and sometimes impossibility - in determining the intent behind information sharing. This poses a methodological challenge and this is why this study with disinformation is less interested in intentions and motivations and more interested in the effects the anti-scientific discourse - epitomized by 'Early Treatment' - had on the Brazilian public health institutions.

In response to these challenges, some scholars have proposed alternative frameworks. Jack[126] suggests focusing on the 'lexicon of lies' in media manipulation, offering a more linguistically-oriented approach to understanding false information. This perspective complements the information disorder framework by emphasising the role of language and framing in shaping perceptions of truth and falsehood. Tandoc Jr et al. [127] explore how the concept of 'fake news' relates to the information disorder framework, highlighting the evolving nature of terminology in this field. Marwick and

[124] Joshua Habgood-Coote, 'Stop Talking about Fake News!' (2019) 62 Inquiry 1033.

[125] Kate Starbird, Ahmer Arif and Tom Wilson, 'Disinformation as Collaborative Work: Surfacing the Participatory Nature of Strategic Information Operations' (2019) 3 Proceedings of the ACM on Human-Computer Interaction 1.

[126] Caroline Jack, 'Lexicon of Lies: Terms for Problematic Information' (2017) 3 Data & Society 1094.

[127] Edson C Tandoc, Zheng Wei Lim and Richard Ling, 'Defining "Fake News": A Typology of Scholarly Definitions' (2018) 6 Digital Journalism 137.

Lewis[128] examine how media manipulators exploit the information disorder landscape, discussing the tactics used to spread false information. Their research complements the information disorder framework by focusing on the actors and strategies involved in creating and disseminating misleading content. These works demonstrate how hard it is to achieve a particular definition of disinformation in the fields of communication studies. Methodologically, I am focusing on analysing the discourse of the anti-scientific network and its institutional reaction, rather than describing wide-ranging impacts of covid disinformation in society.

Weaponization of Information

The weaponization of information represents a strategic approach to using information as a tool for achieving specific goals, often in the context of geopolitics, hybrid warfare or political manipulation.[129] This concept encompasses the strategic creation and dissemination of false content, exploitation of societal divisions, use of advanced technologies, and integration with broader geopolitical objectives. The theoretical significance of this concept lies in its recognition of information as a powerful asset in modern conflicts and power struggles, and it particularly used in the context of international relations and geopolitical discussions.

Jeangène Vilmer et al.[130] analyse information manipulation from an international perspective, emphasising the strategic objectives behind exogenous and endogenous disinformation campaigns around the world. Their work helps contextualize the weaponization of information within broader international relations theories. Expanding

[128] Alice E Marwick and Rebecca Lewis, 'Media Manipulation and Disinformation Online' https://edisciplinas.usp.br/pluginfile.php/4602579/mod_resource/content/1/DataAndSociety_MediaManipulationAndDisinformationOnline.pdf accessed 4 January 2025.

[129] Peter Pomerantsev and Michael Weiss, 'The Menace of Unreality: How the Kremlin Weaponizes Information' [2014] Culture and Money: A Special Report.

[130] Jean-Baptiste Jeangène Vilmer and Heather A Conley, Successfully Countering Russian Electoral Interference (JSTOR 2018) https://www.jstor.org/stable/pdf/resrep22297.pdf accessed 4 January 2025.

on this concept, Briant[131] examines how state and non-state actors use information as a weapon in the digital age. Her work provides crucial insights into the evolving nature of information warfare, highlighting the increasing sophistication of disinformation campaigns and their potential impacts on democratic processes.

Bradshaw and Howard[132] broaden the scope of inquiry by studying the global spread of computational propaganda as a form of weaponized information. Their research highlights the role of technology in amplifying and automating disinformation campaigns. However, Boyd-Barrett[133] argues that this framing can be used to delegitimise dissenting voices and alternative media sources, potentially stifling important debates. This critique underscores the need for careful consideration of how we conceptualize and discuss information manipulation, particularly in politically charged contexts.

Echo Chambers and Filter Bubbles

The concepts of echo chambers[134] and filter bubbles[135] describe how digital environments can reinforce existing beliefs and limit exposure to diverse viewpoints. Echo chambers and filter bubbles describe how digital environments limit exposure to diverse viewpoints through like-minded communities and algorithmic personalization. These concepts have been influential in understanding online polarization and information silos within political science research.

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131 Emma L Briant and Alicia Wanless, '*A Digital Ménage à Trois: Strategic Leaks, Propaganda and Journalism', Countering Online Propaganda and Extremism* (Routledge 2018) https://www.taylorfrancis.com/chapters/edit/10.4324/9781351264082-4/digital-m%C3%A9nage-trois-emma-briant-alicia-wanless accessed 4 January 2025.

132 Samantha Bradshaw and Philip N Howard, 'Challenging Truth and Trust: A Global Inventory of Organized Social Media Manipulation' (2018) 1 The computational propaganda project 1.

133 Oliver Boyd-Barrett and Tanner Mirrlees, *Media Imperialism: Continuity and Change* (Rowman & Littlefield 2019).

134 Cass R. Sunstein, #*Republic: Divided Democracy in the Age of Social Media* (Princeton University Press 2017).

135 Eli Pariser, *The Filter Bubble: What the Internet Is Hiding from You* (Penguin Press 2011).

Quattrociocchi et al.[136] have provided empirical evidence for echo chambers in social media, demonstrating how they contribute to the spread of misinformation. Their work underscores the potential dangers of fragmented information ecosystems, where false narratives can flourish unchallenged.

However, the impact of echo chambers and filter bubbles has been subject to debate. Bruns[137] challenges this narrative, suggesting that most internet users encounter a wider range of opinions online than offline. His research highlights the need for nuanced approaches to studying online information consumption, taking into account the diverse ways in which people navigate digital spaces.

Dubois and Blank[138] argue that politically interested individuals tend to seek out diverse information sources, potentially mitigating the effects of filter bubbles. Their work emphasises the importance of considering individual agency and motivation in studies of online information exposure. Flaxman et al.[139] examine the impact of the internet on the ideological distance between individuals, offering a more quantitative approach to studying echo chambers. Their findings suggest a relationship between online news consumption and political polarization, with an increase, actually, in consumption of content from the opposing political spectrum. Bail et al.[140] take an experimental approach, conducting studies on exposure to opposing views on social media. Their work provides valuable insights into the real-world effects of breaking out of echo chambers, suggesting that exposure to opposing views can sometimes backfire

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136 Walter Quattrociocchi, Antonio Scala and Cass R Sunstein, 'Echo Chambers on Facebook' [2016] SSRN 2795110 https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2795110 accessed 4 January 2025.

137 Axel Bruns, *Are Filter Bubbles Real?* (John Wiley & Sons 2019).

138 Elizabeth Dubois and Grant Blank, 'The Echo Chamber Is Overstated: The Moderating Effect of Political Interest and Diverse Media' (2018) 21 Information, Communication & Society 729.

139 Seth Flaxman, Sharad Goel and Justin M Rao, 'Filter Bubbles, Echo Chambers, and Online News Consumption' (2016) 80 Public opinion quarterly 298.

140 Christopher A Bail et al., 'Exposure to Opposing Views on Social Media Can Increase Political Polarization' (2018) 115 Proceedings of the National Academy of Sciences 9216.

and increase polarization. Finally, Zuiderveen Borgesius et al.[141] provide an assessment of the filter bubble theory, synthesizing existing research and pointing out areas where the concept may be oversimplified.

While echo chambers and filter bubbles help explain how misinformation persists within closed information environments, they do not fully account for how false information spreads rapidly across different networks and communities. This leads us to examine another crucial aspect of online disinformation: the phenomenon of viral spread.

Viral Spread

The concept of viral spread describes the rapid dissemination of information through social networks and digital platforms. In the context of disinformation, this phenomenon plays a crucial role in the proliferation of false or misleading content. Vosoughi et al.[142] conducted a seminal study on this topic, analysing the spread of true and false news on Twitter. Their findings revealed that false news spread farther, faster, deeper, and more broadly than true news, hence the term 'viral'. This metaphor highlights the speed with which information is replicated throughout the networks. It also underscores the challenges of containing false information once it begins to circulate and emphasises the importance of early detection and intervention strategies. Lazer et al.[143] build on this concept, arguing for interdisciplinary approaches, meaning an articulation between different areas and researchers to share and analyse data that should be collaboratively provided by social media companies, in order to combat misinformation by understanding its viral nature.

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[141] Frederik J Zuiderveen Borgesius et al., 'Should We Worry about Filter Bubbles?' (2016) 5 Internet policy review 1.

[142] Vosoughi, Roy and Aral (n 104)

[143] David MJ Lazer et al., 'The Science of Fake News' (2018) 359 Science 1094.

However, some researchers caution against overusing the 'viral' metaphor. Nahon and Hemsley[144] argue that it oversimplifies complex social and technological processes. They propose a more nuanced view that considers the role of 'gatekeepers' in information flows, suggesting that virality is not merely a spontaneous phenomenon but often the result of coordinated efforts and existing power structures. These views have an interesting fit with the network dynamics Castells proposes, as discussed in Section 2.3.5, since Castells argues that more central and influential nodes play an important part in collaborating or hampering the spread of information.

Chadwick suggests that focusing solely on online virality may overlook the role of traditional media in amplifying online content. His concept of a 'hybrid media system' emphasises the complex interplay between online and offline media in the spread of information and misinformation. This 'hybrid' dimension bears parallels with the methodology of this thesis, discussed in Chapter 5, systematising online and offline communications of the anti-scientific network to analyse its effects. For example, one of the efforts of the physician's association that advocated for 'Early Treatment' was to publish a 'manifest for life' on the main printed newspapers of Brazil, recommending Early Treatment[145].

Finally, in the context of scientific disinformation, explored in detail in Chapter 4, the viral spread of false information poses particular challenges. Brossard and Scheufele[146] examine how the viral nature of online content interacts with scientific communication, highlighting the difficulties scientists face in competing with

[144] Nahon and Hemsley (n 103)

[145] Poder360, 'Jornais publicaram anúncio pago de "tratamento precoce" contra covid-19' (Poder360, 23 February 2021) https://www.poder360.com.br/midia/jornais-publicaram-anuncio-pago-de-tratamento-precoce-contra-covid-19/ accessed 3 January 2025

[146] Dominique Brossard and Dietram A Scheufele, 'Science, New Media, and the Public' (2013) 339 Science 40.

sensationalised, easily shareable misinformation. West and Bergstrom[147] emphasise how scientific misinformation have greater online reach when associated with emotional and rhetorical compounds, a condition that changes not only how people consume science, but how scientist produce and share their work, as the findings in Chapter 9 suggest.

The viral spread of information, however, does not alone explain why some false narratives gain widespread acceptance while others fail to take hold. Understanding this requires examining how people evaluate the trustworthiness of information sources in networked environments, leading us to consider the crucial role of source credibility in disinformation's effectiveness.

Source Credibility

Source credibility refers to the perceived trustworthiness and expertise of information sources, playing a crucial role in how individuals evaluate and internalize information. This includes understanding who are the sources of information, who validates it and how trust in information cascades throughout the information flows. The research summarized below notes how this concept has taken on new dimensions when analysing online communication, encompassing traditional markers of authority, digital indicators of credibility, and audience perceptions. This work is relevant to this thesis, as I focus on the production and validation of information in scientific institutions but mainly in the anti-science network, using mostly Jasanoff's concepts which I will discuss in the next chapter.

Metzger and Flanagin[148] studied how individuals assess the credibility of online information, noting that traditional cues of expertise may be less relevant in digital

[147] Jevin D West and Carl T Bergstrom, 'Misinformation in and about Science' (2021) 118 Proceedings of the National Academy of Sciences e1912444117.

[148] Miriam J Metzger and Andrew J Flanagin, 'Credibility and Trust of Information in Online Environments: The Use of Cognitive Heuristics' (2013) 59 Journal of pragmatics 210.

environments. The theoretical significance of source credibility in disinformation studies lies in its ability to explain why some false narratives gain traction while others do not. Tandoc Jr et al.[149] examine how social media users assess the credibility of news shared online, highlighting the interplay between source characteristics, message content, and individual predispositions.

Waisbord[150] further complicates our understanding of source credibility by situating it within the context of 'post-truth' politics. He suggests that the fragmentation of media ecosystems and the polarization of political discourse have led to a situation where credibility is often assessed based on ideological alignment rather than traditional markers of expertise or trustworthiness.

In the realm of scientific communication, source credibility takes on particular importance. Hendriks et al.[151] examine how the perceived credibility of scientists impacts public understanding and acceptance of scientific findings. Their work demonstrates that in addition to the content of scientific messages, the perceived expertise and trustworthiness of the communicator play crucial roles in shaping public opinion.

Finally, the Pandemic further aggravated these issues and has brought them into focus. Evanega et al.[152] analyse how source credibility influenced the spread of Covid misinformation, finding that even high-profile figures and institutions can become sources of false information. In their quantitative analysis, 'grassroots' misinformation had a significantly smaller impact compared to statements by Donald Trump, which

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[149] Tandoc et al. (n 127)

[150] Silvio Waisbord, 'Truth Is What Happens to News: On Journalism, Fake News, and Post-Truth' (2018) 19 Journalism Studies 1866.

[151] Friederike Hendriks, Dorothe Kienhues and Rainer Bromme, 'Measuring Laypeople's Trust in Experts in a Digital Age: The Muenster Epistemic Trustworthiness Inventory (METI)' (2015) 10 PloS one e0139309.

[152] Sarah Evanega et al., 'Coronavirus Misinformation: Quantifying Sources and Themes in the COVID-19 'Infodemic'' (2020) 19 JMIR Preprints 2020.

were amplified by professional journalism. This phenomenon is part of what this thesis analyses in the anti-scientific network, and how these figures became important 'vectors' or catalysers of Early Treatment. My work builds, especially in chapters 7 and 8, upon this investigation around the relationship between authority, credibility, and the spread of scientific disinformation in crisis situations. Finally, I discuss how people are also more or less inclined to believe certain information because of their cognitive biases.

Cognitive Biases

Cognitive biases, while traditionally studied in psychology and behavioural sciences, take on new significance in Castells' network society. These systematic patterns of judgment not only affect individual information processing but can be amplified through network effects. In traditional institutional settings, professional standards and peer review helped mitigate the impact of cognitive biases on scientific communication. However, in networked environments, these biases can be reinforced and spread rapidly through what Castells[153] calls 'programmed networks' – groups sharing similar perspectives and validation criteria.

In the context of disinformation, understanding these biases is crucial for explaining why false information can persist even in the face of contradictory evidence. This field has received a lot of attention as it tries to explain *why* people consume information in a given way or what are the mechanisms that lead people to believe or disbelieve certain types of information.

Kahneman's[154] work on cognitive biases is one of the main works on how these mental shortcuts can lead to errors in judgment, including in the realm of information

[153] Castells (n 52)

[154] Daniel Kahneman, 'Thinking, Fast and Slow' [2011] Farrar, Straus and Giroux https://www.pdcnet.org/pdc/bvdb.nsf/showopenaccess?open&repid=852577BA0050DC0D&docid=2BE9C7FA6C507E4DC1257ADA0072A186&solarid=inquiryct_2012_0027_0002_0054_0057 accessed 4 January 2025.

consumption. He identifies key biases such as confirmation bias (the tendency to search for information that confirms pre-existing beliefs), availability heuristic (overestimating the likelihood of events with greater 'availability' in memory), and anchoring bias (over-reliance on the first piece of information encountered when making decisions). His seminal work has been used in several experimental approaches, aimed at a variety of situations related to decision-making and human judgment.[155] Building on this foundation, Pennycook and Rand[156] examine how cognitive biases influence susceptibility to fake news. Their research highlights the role of analytical thinking in combating misinformation, suggesting that individuals who engage in more deliberative cognitive processes are less likely to believe false information. In contrast, those who are on the other range of human cognition and rely more heavily on intuitive, automatic thinking are more susceptible to accepting misinformation as true.

Despite the importance of his work, some scholars – even outside the strict realm of behavioural sciences – caution against overemphasising individual cognitive biases at the expense of structural factors, such as media environments[157] and socioeconomic inequalities.[158] As previously mentioned, it is argued that focusing solely on cognitive biases may overlook the role of media systems and political polarization in the spread of misinformation. She emphasises the need to consider broader social and cultural contexts, such as institutional trust, when examining why people believe and share false information. A media system applies a broader notion of media as a

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[155] David Paulus et al., 'The Influence of Cognitive Bias on Crisis Decision-Making: Experimental Evidence on the Comparison of Bias Effects between Crisis Decision-Maker Groups' (2022) 82 International Journal of Disaster Risk Reduction 103379; and Bingsheng Liu, Zengqiang Qin and Jinfeng Zhang, 'Cognitive Bias in Citizens' Perceptions of Government Performance in Response to COVID-19: Evidence from a Large-Scale Survey Experiment in China' (2022) 25 International Public Management Journal 1072.

[156] Gordon Pennycook and David G Rand, 'Lazy, Not Biased: Susceptibility to Partisan Fake News Is Better Explained by Lack of Reasoning than by Motivated Reasoning' (2019) 188 Cognition 39.

[157] Marwick et al. (n 128)

[158] Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (PublicAffairs 2019).

sociotechnical model, where its parts and characteristics limit the meanings that someone can assign to the media.

In closer dialogue with this thesis, in the context of scientific disinformation, cognitive biases pose particular challenges. Sinatra and Hofer[159] explore how cognitive biases intersect with scientific literacy, demonstrating that even individuals with high levels of scientific knowledge can be susceptible to misinformation due to underlying biases. These findings point to two other large fields of research and policy that intersect with disinformation, which relates to literacy (e.g. media, scientific) and how disinformation (as a collective state) can be correlated to lack of understanding, and complexity and specificity of scientific fields.

Finally, Ecker et al.[160] argue how various cognitive biases have contributed to the persistence of Covid misinformation. They suggest that while interventions targeting individual biases can be helpful, addressing the infodemic requires a multifaceted approach that considers both cognitive and social factors. In his work, a cognitive factor can be exemplified as intuitive thinking or memory capacity, while a social aspect relates to elements such as selection and trust of social cues and social validation.

For quite obvious reasons, governance of the Pandemic has provided a real-world laboratory to observe all of these phenomena in action. It is evident that all of them are intensely correlated and help explain this complex sociological phenomenon of why certain choices are made for specific public policies to govern a pandemic, such as Early Treatment.

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[159] Gale M Sinatra and Barbara K Hofer, 'Public Understanding of Science: Policy and Educational Implications' (2016) 3 Policy Insights from the Behavioral and Brain Sciences 245.

[160] Ullrich KH Ecker et al., 'The Psychological Drivers of Misinformation Belief and Its Resistance to Correction' (2022) 1 Nature Reviews Psychology 13.

While these various approaches to studying disinformation offer valuable insights, none alone fully explains how anti-scientific networks could effectively challenge Brazilian public health institutions during the pandemic. The case of 'Early Treatment' demonstrates how multiple aspects of disinformation – from viral spread through WhatsApp groups to the weaponization of scientific uncertainty – can combine to produce significant institutional effects. Understanding these dynamics in Brazil requires examining how these theoretical frameworks operate in the specific Brazilian context, where unique patterns of social media usage, institutional structures, and political dynamics shaped the spread and impact of scientific disinformation. Next, I will present a panorama and critical analysis of the literature produced specifically about Brazil and connect this back to the main concept of interest, which is scientific disinformation

The Brazilian case is particularly instructive because it shows how scientific disinformation operates not just as false information, but as a form of networked power that can effectively challenge institutional authority. The 'Early Treatment' network exemplified several key aspects of disinformation discussed above: it created echo chambers through closed WhatsApp groups, leveraged source credibility by involving medical professionals, and exploited cognitive biases through emotionally resonant personal testimonies. However, understanding how these communication elements were combined to effectively influence the Brazilian population and institutions, requires examining Brazil's specific social and technological context.

2.5 Disinformation and Scientific Disinformation in Brazil:

Historically, Brazil's media landscape has been characterised by high levels of ownership concentration, with a small number of family-owned conglomerates controlling a significant share of traditional media outlets. This has fostered a long-standing public scepticism towards institutional media, creating an environment where alternative information sources, particularly on digital platforms, can gain rapid legitimacy. The country's transition to a digital society has been swift but uneven. While 85% of households had internet access in 2023, significant disparities persist along regional and socioeconomic lines. Crucially, 58% of all users—and 90% in the lowest income brackets—access the internet exclusively through mobile phones.[161] This mobile-centric, and often data-limited, digital experience privileges platforms optimised for low bandwidth, most notably WhatsApp.

The dominance of WhatsApp is arguably the most distinctive feature of Brazil's information ecosystem. WhatsApp penetration in Brazil reaches 93% of internet users—approximately 148 million people. [162]As research by Resende et al. has shown, the platform's closed-group architecture and end-to-end encryption create high-trust, peer-to-peer networks that are largely insulated from public scrutiny and traditional fact-checking mechanisms.[163] This environment proved instrumental for political mobilisation in the 2018 presidential election and became the primary vector for the dissemination of health-related disinformation during the pandemic.

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[161] CGI.Br, 'Apresentação dos resultados da pesquisa sobre o uso das Tecnologias de Informação e Comunicação nos domicílios brasileiros – TIC Domicílios 2024' (Cetic.br – Centro Regional para o Desenvolvimento da Sociedade da Informação) https://cetic.br/pt/pesquisa/domicilios/publicacoes/ acedido em 25 julho 2025.

[162] Statista Research Department, WhatsApp in Brazil – statistics & facts (Statista, online, accessed 26 July 2025) https://www.statista.com/topics/7731/whatsapp-in-brazil/

[163] Gustavo Resende et al. (n 90)

This technological context is deeply intertwined with a political culture of digital populism, a phenomenon Leticia Cesarino has extensively analysed in relation to Jair Bolsonaro.[164] His political strategy relied on bypassing traditional media and political institutions to cultivate a direct, unmediated relationship with his base through social media. This created a highly effective ecosystem for circulating narratives that reinforced an anti-establishment, anti-science, and nationalist worldview. Within this context, scientific disinformation, as explored by Ricard and Medeiros, was not an ancillary issue but a core component of a political project aimed at delegitimising institutional sources of authority, from the press to the public health system itself.[165] Next, I will discuss in further detail the Brazilian informational ecosystem and the challenges of disinformation in the country.

2.5.1 Demographic factors of internet usage in Brazil

The scientific literature on disinformation in Brazil, while of high quality, does not match the volume produced in American or European academia. This discrepancy is significant because it is often erroneously assumed that phenomena observed in Western democracies of the Global North can be seamlessly applied to other contexts. Although there are undoubtedly shared experiences, such direct scientific translation is not always possible. This is partly because Latin America exhibits unique socio-demographic patterns and a distinct history of technological development and adoption. Consequently, the profile of social media usage and consumption in Brazil markedly differs from that in the United States. Brazil is among the most active countries online and on social media[166], yet it predominantly engages with platforms like WhatsApp,

[164] Leticia Cesarino, 'On Digital Populism in Brazil | PoLAR: Political and Legal Anthropology Review' https://polarjournal.org/2019/04/15/on-jair-bolsonaros-digital-populism/ accessed 17 December 2023.

[165] Julie Ricard and Juliano Medeiros, 'Using Misinformation as a Political Weapon: COVID-19 and Bolsonaro in Brazil' (2020) 1 Harvard Kennedy School Misinformation Review.

[166] Simon Kemp – We Are Social; MELTWATER, Digital 2024: Brazil – DataReportal – Global Digital Insights (23 February 2024) https://datareportal.com/ /digital-2024-brazil?rq=brazil accessed 4 January 2024.

which are not as widely used in the USA. This distinction, which I will explore further, means that not all studies from the aforementioned regions can accurately inform the dynamics of disinformation in Brazil. Seminal works such as 'Network Propaganda'[167] provide valuable theoretical perspectives but their experimental methodologies offer limited insight into Brazilian specifics.

Brazil's media environment has long been characterised by high levels of concentration. According to Reporters Without Borders,[168] a small number of conglomerates control a significant portion of the country's media outlets. This concentration has implications for information diversity and can create vulnerabilities in the information ecosystem that disinformation campaigns may exploit. Simultaneously, Brazil's digital landscape has been rapidly evolving, albeit with persistent disparities. According to the most recent 169survey by CETIC.br on meaningful connectivity, [170] 85% of Brazilian households had internet access in 2023, a stark contrast with 13% of households connected back in 2013. However, this growth has not been uniform across all segments of society. The survey reveals persistent disparities over the years.

- Regional differences: While 84% of households in urban areas have internet access, this figure drops to 65% in rural areas.

- Socioeconomic disparities: In class A households, internet access is nearly universal at 100%, compared to only 60% in classes D and E.

[167] Benkler et al. (n 8)

[168] Reporters Without Borders, 'Brazil | RSF' (6 December 2024) https://rsf.org/en/country/brazil accessed 4 January 2025.

[170] CGI.br, Conectividade significativa: propostas para medição e o retrato da população no Brasil (Núcleo de Informação e Coordenação do Ponto BR 2024) https://cetic.br/media/docs/publicacoes/7/20240415183307/estudos_setoriais-conectividade_significativa.pdf accessed 4 January 2025.

- Device usage: 58% of internet users access the internet exclusively through mobile phones, a figure that rises to 90% among users from classes D and E.

These disparities create a complex network of information flows, where some segments of the population are more vulnerable to certain types of disinformation due to limited access to diverse information sources or fact-checking resources. Recently, an exploratory approach of the same data, but focused on meaningful connectivity showed that only 22% of Brazilian users had satisfactory conditions of internet users, such as infrastructure and skills. The richest state of the country, São Paulo, had the higher rate, still below 40%.[171]

Brazil's economic disparities directly shape digital access patterns. About 20% of the population cannot afford regular internet access.[172] Wealthier neighbourhoods consistently enjoy superior internet speeds, while around 13% of areas near educational facilities have speeds below the 80 Mbps threshold necessary for effective e-learning.[173]

These infrastructure limitations mean that for many Brazilians, WhatsApp represents their primary or only gateway to digital information. Early research on the pandemic showed that 73% of Brazilians believed at least one false pandemic-related

[171] Ibid

[172] Gustavo Alves, Hacking the Gap – Brazil's Path to Digital Inclusion (World Summit Awards, 17 July 2024) https://wsa-global.org/2024/07/17/hacking-the-gap-brazils-path-to-digital-inclusion/ accessed 26 July 2025

[173] Ookla for Good, Digital Divide in Brazil (Ookla for Good, online, accessed 26 July 2025) https://www.ookla.com/articles/ookla-for-good-digital-divide-brazil; and Niccolò Comini, Nicolò Gozzi and Nicola Perra, *Bridging Brazil's Digital Divide: How Internet Inequality Mirrors Income Gaps* (World Bank, 11 June 2024, Digital Development blog, accessed 26 July 2025) https://blogs.worldbank.org/en/digital-development/bridging-brazil-s-digital-divide--how-internet-inequality-mirror

story, and WhatsApp was responsible for spreading 73% of pandemic misinformation.[174] This demonstrates how Brazil's unique digital communication landscape—characterized by WhatsApp dominance, zero-rating policies, and limited digital literacy—creates particular vulnerabilities to networked disinformation campaigns.

These contextual factors were determinant in the media ecology of Brazil and are critical for analysing how the anti-scientific network operated during the pandemic. The network's effectiveness cannot be separated from Brazil's specific digital infrastructure, which enabled rapid dissemination of false information through trusted personal networks while limiting access to authoritative counter-narratives.

On the literature analysing the relationship between the demographics and disinformation, Moura et al.[175] research on demographic factors influencing the sharing of fake news provides a nuanced understanding of who is most likely to engage with and spread misinformation in Brazil. Their findings reveal that age, education level, and political ideology are significant factors in determining an individual's likelihood of sharing fake news. Lower levels of formal education and more extreme political views (on both ends of the spectrum) were found to be more likely to share false information.

Soares et al.[176] conducted a comparative analysis of social media disinformation in Brazil and other countries, finding that the network structures of platforms like Facebook and then Twitter played a similar role in facilitating the spread of false information across different national contexts. The study highlighted how the algorithmic recommendations and sharing mechanisms of these platforms created

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[174] Helena Costa and Mônica Chaves, Infected texts: Disinformation meets polarization in Brazil (Heinrich Böll Stiftung, 22 June 2020, online, accessed 26 July 2025) https://eu.boell.org/en/2020/06/22/infected-texts-disinformation-meets-polarization-brazil

[175] Mauricio Moura, Natalia Tosi and Caio C. V. Machado, 'Demographic Factors Influencing the Sharing of Fake News in Brazil: A Multivariate and Qualitative Study' (2023) 12 The Journal of Social Media in Society 232.

[176] Soares et al. (n 88)

similar patterns of information diffusion, regardless of the specific cultural or political context. Despite these similarities, Brazil's disinformation landscape has unique features. The prominence of WhatsApp in Brazil's information ecosystem created distinct patterns of information spread not seen as prominently in countries where other platforms dominate. The closed, encrypted, and peer-to-peer nature of WhatsApp groups in Brazil formed tight-knit information networks that were particularly effective at spreading disinformation within communities of trust, especially because these spaces where hard to map, access, and monitor.

2.5.2 Social Media and Disinformation Spread

In recent years, social media platforms have played an increasingly prominent role in shaping Brazil's information landscape, particularly in the political sphere. According to We Are Social and Hootsuite's Digital 2024 report,[177] there are 144 million social media users in Brazil, representing 66.4% of the total population. WhatsApp and Facebook remain the most popular platforms, with 93.4% and 83.2% of internet users (aged from 16 to 64) accessing these platforms, respectively. This research is consistent with the research from Statista indicated above.

On the other hand, Twitter (now X) ranks almost last in user adoption in Brazil for the main social media platform, below Pinterest and Kwai, for instance, and reaching 44% of the internet users aged from 16 to 64. Despite that, Twitter has played a significant role in the country's digital landscape, especially in political matters.[178] This aligns with trends in other nations, where Twitter, though not the most popular

[177] Kemp (n 166)

[178] Stefan Wojcik and Adam Hughes, 'Sizing Up Twitter Users' (Pew Research Center, 24 April 2019) https://www.pewresearch.org/internet/2019/04/24/sizing-up-twitter-users/ accessed 4 January 2025.

platform, remains a space for political conversation and influential figures such as journalists and politicians.[179]

Evangelista and Bruno[180] analysed the role of social media in the 2018 Brazilian elections, highlighting how these platforms facilitated the rapid spread of political disinformation. The networked nature of social media, with its ability to quickly disseminate information through interconnected user groups, has been particularly conducive to the viral spread of false or misleading political content.

A notable feature of Brazil's disinformation landscape is the prominence of WhatsApp as a vector for misinformation. Resende et al.[181] studied the spread of political misinformation on WhatsApp during the 2018 Brazilian presidential election. They found that the platform's network structure, characterised by closed groups and end-to-end encryption, created unique challenges for combating disinformation. The peer-to-peer nature of WhatsApp communications allowed for the rapid spread of false information within trusted networks, making it particularly resistant to external fact-checking efforts.

Machado and Konopacki's[182] work discusses how these characteristics of WhatsApp that later would be crucial for the 'Early Treatment' network's success. The platform's encrypted nature allowed medical professionals and political actors to share unproven treatment protocols without oversight, while its group structure created trusted spaces where alternative scientific narratives could flourish. The rapid spread of

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[179] Raquel Recuero and Felipe Soares, 'O Discurso Desinformativo sobre a Cura do COVID-19 no Twitter: Estudo de caso' (2021) 24 E-Compós https://www.e-compos.org.br/e-compos/article/view/2127 accessed 4 January 2025.

[180] Rafael Evangelista and Fernanda Bruno, 'WhatsApp and Political Instability in Brazil: Targeted Messages and Political Radicalisation' (2019) 8 Internet Policy Review https://policyreview.info/articles/analysis/whatsapp-and-political-instability-brazil-targeted-messages-and-political accessed 4 January 2025.

[181] Gustavo Resende et al. (n 95)

[182] Machado and Konopacki (n 106)

these narratives through broadcast lists and forwarded messages helped establish 'Early Treatment' as a credible alternative to official public health guidance, demonstrating how platform-specific features can amplify scientific disinformation's institutional impact.

2.5.3 Scientific Disinformation in the world and in Brazil

Scientific disinformation is characterised by several key features that transcend national boundaries. Oreskes and Conway[183] in their seminal work 'Merchants of Doubt' explored how the exploitation of scientific uncertainty has been a consistent strategy in global disinformation campaigns, from tobacco health risks to climate change denial. They demonstrated how networks of industry-funded scientists and think tanks created an appearance of scientific debate long after a consensus had been reached, effectively delaying policy action.

The misrepresentation of scientific consensus is another common feature of global scientific disinformation. Cook et al.[184] analysed the 'consensus gap' – the difference between the actual scientific consensus on climate change and the public perception of that consensus. Their work revealed how disinformation networks, often linked to fossil fuel interests, actively worked to magnify this gap, creating a false impression of scientific disagreement. Though this literature has intense dialogue with the angle I am examining on scientific disinformation, I am less focused on industrial mobilisation than on how a specific anti-scientific network destabilised an institution

[183] Naomi Oreskes and Erick M. Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming* (Bloomsbury Press 2010).

[184] John Cook et al., 'Quantifying the Consensus on Anthropogenic Global Warming in the Scientific Literature' (2013) 8 Environmental Research Letters 024024.

through anti-scientific discourse. In the case of Covid in Brazil, a public health policy-making institution such as the Ministry of Health.

The Pandemic brought the issue of scientific disinformation into sharp focus, and Brazil was a huge playground for scientific disinformation, for reasons described in Chapter 1 and amid the case of Early Treatment. Ricard and Medeiros[185] examined the Brazilian government's communication during the early stages of the pandemic, finding that official channels sometimes contributed to the spread of health misinformation. This highlighted the complex interplay between political networks and public health communication, where official sources – such as the social media accounts of the government's Secretariat of Social Communication or the Ministry of Health – can sometimes become vectors of disinformation.

Brazilian academic research has extensively documented the widespread dissemination of medical misinformation during the COVID-19 pandemic, particularly concerning hydroxychloroquine, chloroquine, and ivermectin. Galhardi et al. conducted a comprehensive empirical study analysing notifications received through the 'Eu Fiscalizo' application, finding that Instagram, Facebook, Twitter, and WhatsApp served as the primary platforms for spreading COVID-19 misinformation. Their research revealed a direct correlation between the circulation of false news about vaccines and Brazilian political polarisation, which became particularly pronounced four months after the country's first COVID-19 case. The study concluded that this phenomenon was 'crucial in discouraging the adherence of segments of the Brazilian population to social distancing and vaccination campaigns.'[186]

[185] Ricard et al. (n 86)

[186] Ibid.

The academic literature demonstrates that the promotion of Early Treatment drugs occurred despite clear evidence of their ineffectiveness. Silva documented how drugs like hydroxychloroquine, ivermectin, and nitazoxanide were prescribed for COVID-19 in Brazil without scientific evidence, often through the 'COVID Kit' - a whopping one fourth of Brazilian adults had taken drugs from this kit as prophylaxis or treatment, including through self-medication – and what it most critical, over 56% had taken some drug of the COVID Kit in an attempt to cure the disease.[187] Multiple randomised controlled trials conducted in Brazil confirmed the lack of efficacy of these treatments.

In this regard, the academic research has revealed the profound impact of scientific disinformation on institutional trust and healthcare delivery in Brazil. Freire et al. conducted a nationwide cross-sectional study of 15,132 health professionals working on the COVID-19 frontline across 2,200 Brazilian municipalities.[188] Their findings were striking: approximately 91% of respondents believed that fake news constituted an obstacle in fighting SARS-CoV-2, while 76.1% reported encountering patients who expressed faith in COVID-19 misinformation.[189] Most significantly, only 29.3% of health professionals agreed that health authorities' stance regarding COVID-19 was consistent and enlightening, whilst 62.6% disagreed with this assessment.[190]

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[187] Furlan et al. (n 15)

[188] Freire NP, Cunha ICKO, Ximenes No FRG, Vargas FL, Santiago BKA, Lourenção LG, Impactos da infodemia sobre a COVID‐19 para profissionais de saúde no Brasil (Cien Saúde Coletiva, 2023, 28(10), 3045–56) https://www.scielosp.org/article/csc/2023.v28n10/3045-3056/en/ accessed 26 July 2025 and Borges PKO, Martins CM, Stocco C, Zuber JFS, Borges WS, Muller EV, Silva MZ, Coradassi CE, Jungles MK, Waldman EA, Impact of COVID‐19 on notifiable diseases: a time series study (Rev Esc Enferm USP, 2024, 58:e20240098) https://www.scielo.br/j/reeusp/a/ZTLCnfrsWCTsyknmzrbJPyd/en/ accessed 26 July 2025

[189] Ibid. Freeira et al.

[190] Ibid.

Barreto et al. conducted qualitative research exploring health professionals' and their families; perceptions of fake news during the pandemic.[191] Their study identified three critical categories: the context of fake news occurrence and dissemination, the consequences of fake news on pandemic experience, and coping strategies to combat misinformation.[192] The research revealed that sociocultural, political, educational, and technological factors influenced fake news dissemination, resulting in consequences including misinformation, self-medication, worsening in the professional-patient relationship, increased need for additional research, and fear in the population.

Brazilian academic literature has documented significant social inequalities in susceptibility to scientific misinformation. Research from the EPICOVID-19 study involving 88,772 participants across 133 Brazilian cities found that 47.9% of participants either believed chloroquine prevented COVID-19 or expressed uncertainty about its effects.[193] The study revealed that 'misbelief and lack of knowledge about chloroquine were greater among the most vulnerable (lowest levels of education and socioeconomic status)'.[194] Women showed 2.49 times greater lack of knowledge than men, whilst racial/ethnic minorities and those with low education and socioeconomic status were more likely to erroneously believe in chloroquine's protective effects.[195]

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191 Mayckel da Silva Barreto et al, 'Fake news about the COVID‐19 pandemic: perception of health professionals and their families' (Revista da Escola de Enfermagem da USP 2021 55:e20210007) https://www.scielo.br/j/reeusp/a/BcygXbK7XbNzTSfJ6MB9Xmr/?format=pdf&lang=en accessed 26 July 2025, and Mayckel da Silva Barreto et al, 'Fake news about the COVID‐19 pandemic: perception of health professionals and their families' (Revista da Escola de Enfermagem da USP 2021; 55:e20210007) https://www.scielo.br/j/reeusp/a/BcygXbK7XbNzTSfJ6MB9Xmr/?format=pdf&lang=en accessed 26 July 2025

192 Ibid.

193 Nunes, B., Silva, I. C., Mielke, G. I., Vidaletti, L. P., Silveira, M. F., & Hallal, P. (2023). Social inequalities in the misbelief of chloroquines protective effect against COVID‐19: results from the EPICOVID‐19 study in Brazil. medRxiv. https://doi.org/10.1101/2023.05.29.23290677

194 Ibid.

195 Ibid.

Miskolci analysed editorials from two major Brazilian newspapers during the first two years of the pandemic, identifying how media framing attributed government decisions to science denialism whilst potentially overlooking 'how the extreme-right adapted use of the paradigm of disinformation created by the tobacco industry to the new mediatic ecosystem'.[196] His research suggests that journalistic emphasis on state incompetence may have overshadowed the role of systematic disinformation campaigns in undermining institutional authority.

Regarding the previously discussed motivations for the different nodes of the network to coalesce around scientific disinformation in Section 1.2.1, there were significant economic incentives behind the promotion of ineffective treatments. Silva documented legal proceedings against groups promoting early treatment, including the conviction of 'Médicos Pela Vida' and associated companies to pay R$ 55 million for collective moral and health damages.[197] The research revealed that Vitamedic, an ivermectin manufacturer, increased its revenue from R$ 15.7 million in 2019 to R$ 470 million in 2020 solely from ivermectin sales.[198] This exemplified how advocates of the 'COVID kit'were being funded to deceive the population, resulting in significant profits at the expense of public health.[199]

Research on consumption patterns demonstrated dramatic increases in drug usage during the pandemic: azithromycin consumption rose by 62.8%, chloroquine/hydroxychloroquine by 504.6%, and ivermectin by 525.7%.[200] These

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[196] Nicolás Miskolci, "Muito além do negacionismo: desinformação durante a pandemia de covid‐19" (Sociologias 2023, vol 25) https://www.scielo.br/j/soc/a/VSJkf7vSCbVgJN4McTMqd4y/?lang=en accessed 26 July 2025

[197] Heslley Machado Silva, 'Reckoning with COVID-19 denial: Brazil's exemplary model for global response' (World Journal of Methodology 2024, 14(3): 92512) https://pmc.ncbi.nlm.nih.gov/articles/PMC11230079/ accessed 26 July 2025

[198] Ibid.

[199] Ibid.

[200] Costa Caetano M, Rodrigues Campos M, et al, "Effect of COVID-19 pandemic on azithromycin, chloroquine/hydroxychloroquine and ivermectin outpatient consumption in Brazil: a joinpoint regression

increases correlated closely with political events endorsing their use, particularly in Brazil's South, Midwest, and North regions.[201] Significantly, no corresponding reduction in COVID-19 cases was observed despite increased medication usage.[202]

Looking at the social media ecosystem, the study 'Ciência Contaminada' (Contaminated Science)203 examines how scientific disinformation spreads in Brazil, particularly in the context of the Pandemic. The research reveals a concerning trend of what they term 'scientific self-isolation,' where individuals and groups reject mainstream scientific consensus in favour of alternative, often unsubstantiated theories. The study highlights how scientific disinformation in Brazil often intertwines with political ideologies, cultural beliefs, and other topics of discussion. For example, science disinformation was associated to people selling healthy life-style courses and people offering geopolitical commentary.

The politicisation of scientific communication during the Pandemic in Brazil exemplifies what Castells describes as the transformation of institutional power in network societies. Scientific discourse about treatments and vaccines became inseparable from political ideology, with different narratives gaining traction along existing political divisions. The 'Early Treatment' network successfully merged scientific claims with political messaging, creating what Castells would term a 'programmed network' that could simultaneously challenge both scientific institutions and political opposition. This conflation of scientific and political discourse was particularly effective because it

analysis" (BMC Public Health 2025 25(1): 1250) https://pubmed.ncbi.nlm.nih.gov/40181299/ accessed 26 July 2025

[201] Ibid.

[202] Ibid.

[203] C V Machado, D A Dourado, J G Bastos dos Santos and N Santos, 'Ciência Contaminada – Analisando o contágio de desinformação sobre coronavírus no YouTube' (LAUT/INCT.DD/Cepedisa report, May 2020) accessed 26 July 2025 https://laut.org.br/ciencia-contaminada/

operated through multiple channels – from formal political statements to informal WhatsApp groups – creating a self-reinforcing cycle of institutional delegitimisation.

This body of academic literature demonstrates that scientific disinformation during Brazil's COVID-19 response was not solely a communication phenomenon but represented a systematic challenge to evidence-based healthcare, institutional authority, and democratic governance. The research reveals how networked misinformation exploited social vulnerabilities, economic incentives, and political polarisation to undermine Brazil's public health response during a critical health emergency.

Instead, as Castells argues, it becomes part of broader power struggles where networks can bypass and challenge traditional institutional authority. In Brazil, this meant that even official health institutions found their messages competing with alternative narratives that gained legitimacy not through traditional scientific validation, but through networked political support.

2.6 Conclusion: Networks, Institutions, and Scientific Knowledge

In conclusion, this chapter has reconceptualized scientific disinformation as a form of networked power, suggesting that how anti-scientific networks in Brazil during the pandemic successfully bypassed and undermined traditional public health institutions. By leveraging Manuel Castells' theory of the network society and connecting it with studies focused on disinformation, the analysis moved beyond conventional approaches that treat disinformation as merely false information or media manipulation. Instead, this study highlighted how informal networks can operate outside traditional institutional frameworks relying on characteristics that are particular to digital communication, including the specificities how information spreads (e.g. virality), how

people perceive information (e.g. biases), and demographic factors affecting how information is disseminated.

Through concepts like networked power, communication power, and the transformation of space and time, the chapter illuminated the mechanisms through which anti-scientific actors can mobilise political influence, construct alternative sources of authority, and effectively paralysed Brazil's public health system, adding and building on the context present in Chapter 1. Brazil's unique media environment, particularly the widespread use of social media, further exacerbated these dynamics, creating fertile ground for the proliferation of disinformation in WhatsApp groups and in official institutional accounts in social media. This theoretical framework not only offers a more nuanced understanding of the intersection between networks and public health institutions but point to the informational challenges for designing strategies to protect scientific authority and institutional legitimacy in the digital age, further discussed in the concluding chapter.

In Chapter 4, this thesis will connect Castells' network society theory to Sheila Jasanoff's work on science and technology studies, to explore the intersections between these frameworks. Both Castells and Jasanoff grapple with the relationship between technology, society, and knowledge production and legitimation, albeit from different angles, are key concepts connecting both of them.

Castells' emphasis on the network as the dominant organisational form of the information age provides a key concept for understanding the changing dynamics of scientific knowledge production and dissemination. Jasanoff's concept of co-production, which posits that scientific knowledge and social order are produced together, can be seen as operating within and shaped by the network structures Castells describes.

The tension between networked forms of communication and institutional scientific spaces, highlighted by Castells, finds resonance in Jasanoff's exploration of how scientific authority is constructed and contested. Jasanoff's[204] assertion that 'knowledge and its material embodiments are at once products of social work and constitutive of forms of social life' aligns with Castells' view of the mutually constitutive relationship between technology and society.

In the context of scientific disinformation about Covid in Brazil, we can see how Castells' analysis of information flows in networks intersects with Jasanoff's concept of civic epistemologies – the culturally specific, historically and politically grounded ways in which publics assess the credibility of scientific claims. Jasanoff and Kim's[205] concept of sociotechnical imaginaries – collectively held visions of desirable futures animated by shared understandings of forms of social life and social order attainable through advances in science and technology – can be seen as operating within and shaped by the network structures Castells describes, where power and counterpower dispute institution stability and political projects.

In the Brazilian context, competing sociotechnical imaginaries about the role of science in addressing the pandemic have played out across the networked public sphere as they were mobilised by the anti-science network. As we move forward in this analysis, it will be crucial to consider how the network dynamics described by Castells can be use to understand the Brazilian anti-science network during the pandemic, and how they interact with the processes of knowledge co-production and civic epistemology outlined by Jasanoff. This intersection provides a rich framework for understanding the complex dynamics of scientific communication and misinformation that contributed to

[204] Sheila Jasanoff (ed), *States of Knowledge: The Co-Production of Science and the Social Order* (Routledge 2004). 3

[205] Sheila Jasanoff and Sang-Hyun Kim, *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power* (University of Chicago Press 2019)

legitimating the adoption of 'Early Treatment' as the main response to the pandemic. In the next Chapter, I will discuss the history of the Brazilian SUS, its institutional architecture, what makes it an important case study for the dynamics between institutions and networks, and in Chapter 4 I will discuss the integration of Jasanoff's concepts with Castells' for the purposes of this thesis.

Chapter 3

The Development of Democratic Health Policy-Making in Brazil: The Sistema Único de Saúde

3.1 Introduction:

This chapter examines Brazil's Unified Healthcare System (SUS) as a model of democratic health governance that was the result of the formation of Brazil's modern republic. This model emerged from the country's re-democratisation in the 1980s. Understanding the historical development and institutional structure of the SUS, including its spaces of social participation and knowledge production, is crucial for analysing how it faced unprecedented challenges during the Pandemic. The SUS it embodies Brazil's constitutional commitment to universal healthcare and demonstrates how scientific expertise, democratic participation, and policy-making can be institutionally integrated. This integration created both significant strengths and potential vulnerabilities that were put to test during the pandemic crisis.

The system's unique features – including its federal organisation, community participation mechanisms, and relationship with private healthcare providers – were designed to ensure both scientific rigour and democratic accountability in health policy-making. However, these same features became points of vulnerability when confronted with the anti-scientific network, that sought to bypass established institutional channels. By examining these features in detail, this chapter provides essential context for understanding the institutional terrain upon which the struggle over Covid policy would play out.

The chapter begins by tracing the historical development of public health governance in Brazil in Section 3.2, from early republic initiatives through the democratic reforms of the 1980s that established the SUS. Section 3.3 then examines the legal and institutional framework that structures the SUS, including its constitutional foundations, organisational principles, and mechanisms for integrating scientific expertise with democratic participation. The chapter concludes by analysing how the system balances federal coordination (Section 3.3.1), community participation (Section 3.3.2), and private sector involvement (Section 3.3.3) in health policy-making, identifying key institutional features that would later be tested during the pandemic.

This historical and institutional analysis reveals how the SUS was designed to legitimise health policy through both scientific expertise and democratic processes. However, as subsequent chapters will demonstrate, this established model of legitimation faced unprecedented challenges during the Pandemic, when an anti-scientific network successfully promoted 'Early Treatment' despite lacking institutional support or scientific evidence. The chapter concludes by identifying key vulnerabilities in the SUS's institutional structure that were exploited during the pandemic, setting the stage for the theoretical framework developed in Chapter 4.

3.2 The SUS and the formation of Health Democracy in Brazil

3.2.1 SUS as an Institution

Many academics claim the SUS is a complex institution that transcends its role as a mere healthcare delivery system. In the Brazilian legal and public health scholarship, Fernando Aith[206] argues that beyond health services, the SUS is a complex institution

[206] Fernando Aith, *Direito Sanitário* (Quartier Latin, 2007)

established by Public Health Law. He posits that the SUS in organising and integrating various public health actions and services in Brazil, and ultimately bringing effectiveness to one of the most important fundamental rights. Data from the National Health Survey of 2019[207] showed that 71.5% of the Brazilian population relied on services provided by SUS, as only 28.5% had some type of private health plan, including medical and dental.

Aith[208] further develops this perspective, explaining that the SUS encompasses a set of organised actions and public health services. He argues that:

> The SUS represents the most important legal institution in Brazilian Health Law, as it integrates and organises various other legal institutions. The SUS is composed of a set of legal institutions responsible for the execution of public health actions and services. It is a system that defines, harmonizes, integrates, and organises actions developed by various public law institutions in Brazil, such as the Ministry of Health, State and Municipal Health Departments, and Regulatory Agencies (Author's translation).[209]

The federalist governance structure of the SUS, its mechanisms of social participation, and the services and policies it delivers, is a vital part of the democratic state and not only an executive body. More traditional definitions of institutions include Scott's[210] notion of an institution as 'comprised of regulative, normative, and cultural-cognitive elements that, together with associated activities and resources, provide

[207] IBGE (n 51)

[208] Fernando Aith, *Manual de Direito Sanitário com Enfoque em Vigilância em Saúde* (CONASEMS 2019)

[209] Ibid

[210] Richard Scott, *Institutions and Organizations: Ideas, Interests, and Identities* (4th edn, SAGE 2013)

stability and meaning to social life' (p. 56). In a different field, North[211] describes institutions as 'the rules of the game in a society or, more formally, the humanly devised constraints that shape human interaction.' They include formal constraints (rules, laws, constitutions) and informal constraints (norms of behaviour, conventions, self-imposed codes of conduct). These structures provide stability and predictability to social life, facilitating cooperation and coordination among individuals and groups. These notions resonate with Castells' arguments in the previous chapter, establishing that institutions are the procedural constraints that function as guardrails for governing political life in a democratic state.

In the context of the SUS, these elements are evident in its legal framework (regulative), its principles of universality and equity (normative), and the shared belief in health as a fundamental right (cultural-cognitive). Paim et al.[212] characterise the SUS as 'more than a mere administrative reform of public health services and institutions,' highlighting its role as a process of state reform and a social policy aimed at promoting citizenship.

Analysing the SUS through this institutional perspective reveals its complexity and far-reaching societal impact. As Menicucci[213] argues, the SUS has become 'an institution in the sociological sense, with cognitive, normative, and regulative effects that structure behaviour and create stability and meaning' (Author's translation). This institutional characterisation of the SUS allows us to consider not only technical healthcare aspects but also its broader institutional dynamics, including power relations

[211] Douglass C. North, Institutions, Institutional Change and Economic Performance (Cambridge University Press 1990)

[212] Jairnilson Paim et al., 'The Brazilian Health System: History, Advances, and Challenges' (2011) 377 The Lancet 1778

[213] Telma Maria Gonçalves Menicucci, 'A Relação Entre o Público e o Privado e o Contexto Federativo Do SUS: Uma Análise Institucional' https://repositorio.cepal.org/handle/11362/36759 accessed 4 January 2025. P. 78

with whom technical, political and participatory bodies. As such, it positions the SUS as a valuable case for examining the interplay between health policy, democratic governance, and social development in the context of a large-scale public institution. It is also a valuable case study to understand how the SUS' policymaking capacity was hindered during the pandemic by an anti-scientific network.

3.2 The Construction of Public Health in Brazil: From the Early Republic to the 1988 Constitution

The development of Brazil's public health system has been marked by significant shifts in political approaches and social engagement. From the early colonial period until the 20th century, the attempts to face public health issues were scarce and almost inexistent. In 1828, a Law for the Municipalization of Health Services (Lei de Municipalização dos Serviços de Saúde) passed a few rules for managing the Port of Rio de Janeiro, but with very limited applicability. Until the Industrial Revolution during the early 1900's, the matter was not viewed as an issue to be dealt by government. With the intense urbanisation, public health policy burgeoned, allied to the concerns with tropical diseases that caused high mortality rates in the country, especially in highly populated areas.[214]

The early 20th century saw the first formal attempts to establish a public health infrastructure in response to urbanization challenges and disease outbreaks.[215] During the presidency of Rodrigues Alves (1902-1906), Oswaldo Cruz, as Director General of Public Health, implemented aggressive sanitation measures. Although today Oswald Cruz is recognised for being the first person to think of health in Brazil as a public policy issue, his mandate was not without significant controversies and public outcry. Of

[214] Mário Scheffer and Fernando Aith, 'O Sistema de Saúde Brasileiro' [2016] Clínica Médica/vol. 1 https://repositorio.usp.br/item/002738281 accessed 1 February 2024.

[215] Ibid

relevance to this discussion, I highlight the decision to make variola vaccinations compulsory in 1904. People had no awareness of what vaccination was, how the treatment worked, and since it involved forceful injections of the population – especially marginalized populations – this policy triggered a significant urban uprising in Rio de Janeiro, known as the Vaccine Revolt ('Revolta da Vacina'). As Scheffer and Aith[216] point out, this policy resulted in social unrest for days and ultimately highlighted the need for greater social participation in public health policy-making, as the government was forced to rescind the mandatory vaccination.



Image 4: A cartoon from *O Malho* (29 Oct. 1904) depicts Oswaldo Cruz as a 'Napoleon with a Syringe and Lancet' and shows the population resisting soldiers on oversized syringes using household objects. It emphasises black women rioters, symbolizing marginalized communities' resistance. Source: The City of Rio de Janeiro.[217]

The Vaccine Revolt carved its place in the history textbooks of Brazil, and is recognised as one of the important episodes of the early Republic that only a few

[216] Ibid

[217] N.a., 'Rio de Janeiro - História Da Cidade - A Revolta Da Vacina' https://multirio.rj.gov.br/index.php/historia-do-brasil/rio-de-janeiro/2917-a-revolta-da-vacina accessed 4 January 2025.

decades earlier had abolished the monarchical rule. The overthrow of the monarchy was led by the military, which is an important force throughout the history of Brazil and its republic.

The aftermath of the Vaccine Revolt led to a reorganisation of health services. In 1920, the General Directorate of Public Health ('Diretoria Geral de Saúde Públca') was replaced by the National Department of Public Health (DNSP), under the leadership of Carlos Chagas. Chagas worked to expand healthcare provision, focused on increase state influence throughout the whole country through the provision of healthcare services.[218] Chagas' reform expanded health activities and cooperation with states.

The Vargas administration (1930-1945) maintained a fragmented system focused on the working class and reliant on private services hired by the state. This new system worked in conjunction with social security institutions directed at workers retirement and pension plans, effectively narrowing its target audience.[219] Subsequent governments adopted different healthcare models, associated to what was known as the 'corporatist' model, where the public health provision was strongly focused on workers, in detriment of people who were not associated to labour organisations.

In the 1960s and 1970s, the military government expanded healthcare coverage primarily through contracts with private providers, while public services were limited. This approach led to a significant private healthcare sector alongside public services.[220] As I will explain later when I lay out the statutes and institutional structure of the SUS (Section 3.3), the 1988 Federal Constitution (CF88) inherited this mixed public and private system (Article 199, CF88). This significant participation of private actors in

[218] Scheffer and Aith (n 209)

[219] Ibid

[220] Paim et al (n 213)

health care has continued, and is the reason why so many health insurance providers and private hospitals participate in the discussions of public health policy. As one can see in the analysis of the anti-scientific network, in Chapter 6, there is a participation of private companies and of the military in disseminating the Early Treatment. This points to a historical tension between these entities and how they seek to expand their role in the formulation of public health policy and even policy in general, which also partially accounts for their participation in the anti-scientific network can be traced back to the role they were granted under the 1988 Federal Constitution.

The aforementioned pattern of centralization and hierarchical healthcare provision persisted through the Brazilian Military Dictatorship (1964-1985). As Scheffer and Aith[221] note:

> Centralized within the federal government, lacking mechanisms for societal participation, and predominantly focused on medical-hospital care, this model proved exclusionary and costly. The State, lacking adequate infrastructure, resorted to purchasing services from the private sector, resulting in a post-payment system based on productivity (Author's translation).

The 1970s saw the emergence of the Sanitary Reform[222] movement, which advocated for a universal, quality public healthcare system inspired by models like the UK's National Health Service.[223] This movement gained momentum during Brazil's re-democratization process in the latter part of the 1980s.

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[221] Scheffer and Aith (n 209)

[222] In Brazilian Portuguese, especially in the domain of Health Law, the adjective 'sanitary' is often used refer to an association with health. Hence the recurrent use of terms such as 'sanitarists' (specialists in public health) or Sanitary Law (law related to the right to health and the public health system).

[223] Scheffer and Aith (n 209)

A culminating moment of this transition was the 8th National Health Conference ('Conferência Nacional de Saúde') in 1986, which officially endorsed the principles that would guide the future SUS, including universality and social participation.[224] The movement and social demand around public healthcare was so intense that these principles were enshrined, two years later, in the 1988 Brazilian Constitution which is still in force. The process of constitution formation itself was seen as a pluralistic and intensely democratic process for the period.[225] The National Constituent Assembly of 1987/1988 involved various stakeholders, including civil society, healthcare professionals, and private providers, all coordinating in establishing the constitutional framework for the right to health.

The 1988 Constitution[226] enshrined the right to health as a fundamental right and established the framework for the SUS. As stated in the document:

> **Article 196**: Health is the right of all and the duty of the State, guaranteed through social and economic policies aimed at reducing the risk of disease and other health hazards and at ensuring universal and equal access to actions and services for its promotion, protection, and recovery' (Author's translation).

The Right to Health became a fundamental right to be *enabled, protected, and promoted* by state action. As I will explain in the next Section 3.3, these positive fundamental rights entail an important structure of health provision and policy-making.

[224] Ibid

[225] José Murilo De Carvalho, *Cidadania No Brasil: O Longo Caminho* (Civilização brasileira 2021).

[226] Constituição do Brasil (n 58)

3.3. The Legal Structure and Organisation of the Brazilian Constitutional Right to Health.

The SUS is founded on a set of principles established in the 1988 Federal Constitution and Law 8.080 of 1990. These principles include *universality*, which guarantees health as a right of all citizens and a duty of the State (Article 196 of the Federal Constitution); *equity*, which aims to reduce inequalities by providing care according to individual needs (Article 7, IV of Law 8.080/90); and *integrality*, ensuring comprehensive care encompassing health promotion, disease prevention, treatment, and rehabilitation (Article 7, II of Law 8.080/90). The SUS is also characterised by *decentralisation*, with a dedicated management at each level of the federal government (Article 7, IX of Law 8.080/90), as well as *regionalization and hierarchization*, organising services in regional networks which are managed hierarchies of increasing levels of complexity (Article 198, I of the Federal Constitution). *Community participation* is another crucial principle, allowing for public involvement in health policy formulation and control through Health Councils and Conferences (Article 198, III of the Federal Constitution).

In addition to the Constitution and Law 8.080/90,[227] several other statutes are essential to the functioning of the SUS. Law 8.142/1990[228] regulates community participation in SUS management and establishes criteria for transfers of health resources across administrations. Constitutional Amendment 29/2000[229] introduced

[227] Brazil, Law No. 8.080 of 19 September 1990, 'Establishes the conditions for the promotion, protection, and recovery of health, the organization and operation of related services, and other provisions' https://www.planalto.gov.br/ccivil_03/leis/l8080.htm accessed 6 February 2024.

[228] Brazil, Law 8.142 of December 28 1990, 'Regulates the participation of the community in the management of the National Universal Health System (SUS) and intergovernmental financial transfers in the health sector, among other provisions https://www.planalto.gov.br/ccivil_03/leis/l8142.htm accessed 6 February 2024.

[229] Brazil, Constitutional Amendment No. 29 of 13 September 2000, 'Establishes the minimum percentages of resources that the Union, States, Federal District, and Municipalities must annually apply to public health actions and services'

minimum percentages of health spending for each level of government, later regulated by Complementary Law 141/2012,[230] which defined health actions and services for budgetary purposes. These laws collectively form the legal framework that guides the implementation and operation of the SUS.

The SUS operates under a model of health federalism, which is based on cooperative federalism principles, where state administrations collaborate towards the implementation of public policy. This is relevant, for example, when São Paulo decided to acquire vaccines independently, since the federal government was resisting acquisition, and distribute to other states.[231] This arrangement is fundamentally supported by Article 23, II of the Federal Constitution, which establishes health as a common competence of all federal entities. Article 198 of the Constitution further defines the SUS as a regionalized and hierarchical network of health actions and services, emphasising the need for coordination among different levels of government.

Health federalism refers to the division and coordination of health-related responsibilities, powers, and resources among different levels of government within a federal system,[232] describing how health policies, services, and financing are organised and managed across federal, state/provincial, and local governments. Coordination is primarily facilitated through intergovernmental commissions and negotiation fora, which

https://www.planalto.gov.br/ccivil_03/constituicao/Emendas/emc/emc29.htm accessed 6 February 2024.

[230] Brazil, Complementary Law No. 141 of 13 January 2012, 'Sets the criteria for the allocation of resources for health, quality parameters, and criteria for the inspection and control of public health actions and services' https://www.planalto.gov.br/ccivil_03/leis/l141.htm accessed 6 February 2024.

[231] Anna Luiza Bertin Henrique, 'COVID-19 Vaccination in Brazil Is a Success, Despite the Failure of the Federal Government' (O'Neill Institute, 2 June 2022) https://oneill.law.georgetown.edu/covid-19-vaccination-in-brazil-is-a-success-despite-the-failure-of-the-federal-government/ accessed 10 March 2025.

[232] Daniel Dourado, Sueli Dallari and Paulo Elias, 'Federalismo Sanitário Brasileiro: Perspectiva Da Regionalização Do Sistema Único de Saúde' (2012) 12 Revista de Direito Sanitário 10.

are important for implementing the principle of solidary and cooperative regionalization outlined in the Health Pact (Pacto pela Saúde) of 2006.[233]

In practice, health federalism in Brazil means that responsibilities are shared among the Union, States, Federal District, and Municipalities, with each entity having specific roles defined by law. Articles 16-19 of Law 8.080/90 detail what role each government level plays in the SUS. The federal government, represented by the Ministry of Health, is primarily responsible for national coordination, formulation of national health policies, and regulation for the execution of public health policy and, in conjunction with ANVISA and ANS, regulation specific to treatments and drug approval. States play a supplementary role, coordinating actions within their territories and providing technical and financial support to municipalities. Municipalities, in turn, are the main executors of health services, responsible for planning, organising, controlling, and evaluating health actions and services at the local level.

An important aspect of health federalism in the SUS is the legal principle of subsidiarity, determined by the provisions on decentralisation of the Federal Constitution and the Law 8080/1990,[234] which suggests that health actions should be executed at the most local level capable of doing so effectively. This principle is reflected in the emphasis on municipalization of health services, with states and the federal government providing support and intervening only when necessary.

The legal basis for this federative arrangement in health is further strengthened by other constitutional provisions. Article 30, VII of the Constitution assigns to municipalities the responsibility to provide health services of local interest, with technical

[233] Ministério da Saúde (Brasil), 'Portaria Nº 399, de 22 de fevereiro de 2006' (Ministério da Saúde, 22 February 2006) https://bvsms.saude.gov.br/bvs/saudelegis/gm/2006/prt0399_22_02_2006.html accessed 10 March 2025.

[234] Aith (n 174): Joint interpretation of Articles 23, II; 30 VII; and 198, I of the Constitution, and Articles 7, IX; 9, 18 of Law 8080/90

and financial cooperation from the Union and the States. Article 195 establishes that health actions and services are to be financed by resources from the social security budget of the Union, states, Federal District, and municipalities, as well as other sources.

This model of health federalism aims to combine national uniformity in basic rules and policies with decentralisation of execution, allowing for adaptation of health policies to local needs while maintaining an integrated national system. It also shows how significant institutional building for the delivery of health care services in Brazil has been, spanning all different levels of government. However, it also carries inherent challenges, particularly in terms of coordination among different levels of government and in addressing regional inequalities in health resources and outcomes.[235] This multilevel regime made Bolsonaro's influence limited in the national system, as states could choose whether or not to follow the recommendations on Early Treatment.

3.3.1 Federalism, Community Participation, and Private Participation in the SUS

Three structural features of the SUS are particularly significant for this thesis: its federal organisation, community participation mechanisms, and its relationship with private healthcare providers. These features determine how the SUS interacts with and responds to different societal actors – including government bodies, civil society organisations, and private healthcare companies. In the experience of the 'Shadow Cabinet', analysed in detail Chapters 6 through 8, it is possible to see how these social actors were sidestepping the SUS' participatory mechanisms. As suggested by Habermas'[236] model of democratic institutions, the SUS transforms public discourse into policy action through established procedures and norms, such as public health councils

[235] Paim et al. (n 213)

[236] Habermas (n 70)

and formal consultation processes to receive social input on the public health policy agenda.

At the national level, the Tripartite Interagency Committee (Comissão Intergestores Tripartite - CIT), established by Ministerial Ordinance 1180 of 1991,[237] promotes dialogue between different bodies. Comprising of three bodies of representatives, from the federal Ministry of Health, the National Council of State Health Secretaries (CONASS), and the National Council of Municipal Health Secretaries (CONASEMS), the CIT is responsible for negotiating and agreeing on operational, financial, and administrative aspects of SUS management that affect all three levels of government.

At the state level, Biparty Interagency Committee (Comissões Intergestores Bipartite - CIB) operate, where two bodies of representatives, from the state health secretariat and the council of municipal health secretaries.[238] These commissions negotiate and decide on issues relevant to their respective states.[239] Further enhancing regional coordination, Regional Interagency Commissions (Comissões Intergestores Regionais - CIR) were introduced by Decree 7508 of 2011, operating at the regional level and bringing together representatives from the state and all municipalities in a given health region.

The federal coordination process in the SUS typically involves a multi-step approach. It begins with policy formulation at the federal level, often incorporating input from states and municipalities through the CIT. This is followed by negotiation of implementation strategies and resource allocation in the CIT. Subsequently, further

[237] Paim et al. (n 213)

[238] Ibid

[239] Dourado et al. (n 233)

negotiation and adaptation occur at state and regional levels through CIBs and CIRs. Finally, implementation primarily takes place at the municipal level, with technical and financial support from states and the federal government.

This process of federal coordination is supported by various planning and management tools, including the National, State, and Municipal Health Plans, and the Agreed and Integrated Programming (Programação Pactuada e Integrada - PPI).[240] These tools ensure that health policies and resource allocation are aligned across different levels of government, promoting a cohesive and efficient health system despite the complexities of Brazil's federal structure. To illustrate the structure of the SUS, I have reproduced an illustration of its federalist organisational structure below.

[240] Paim et al (n 213)

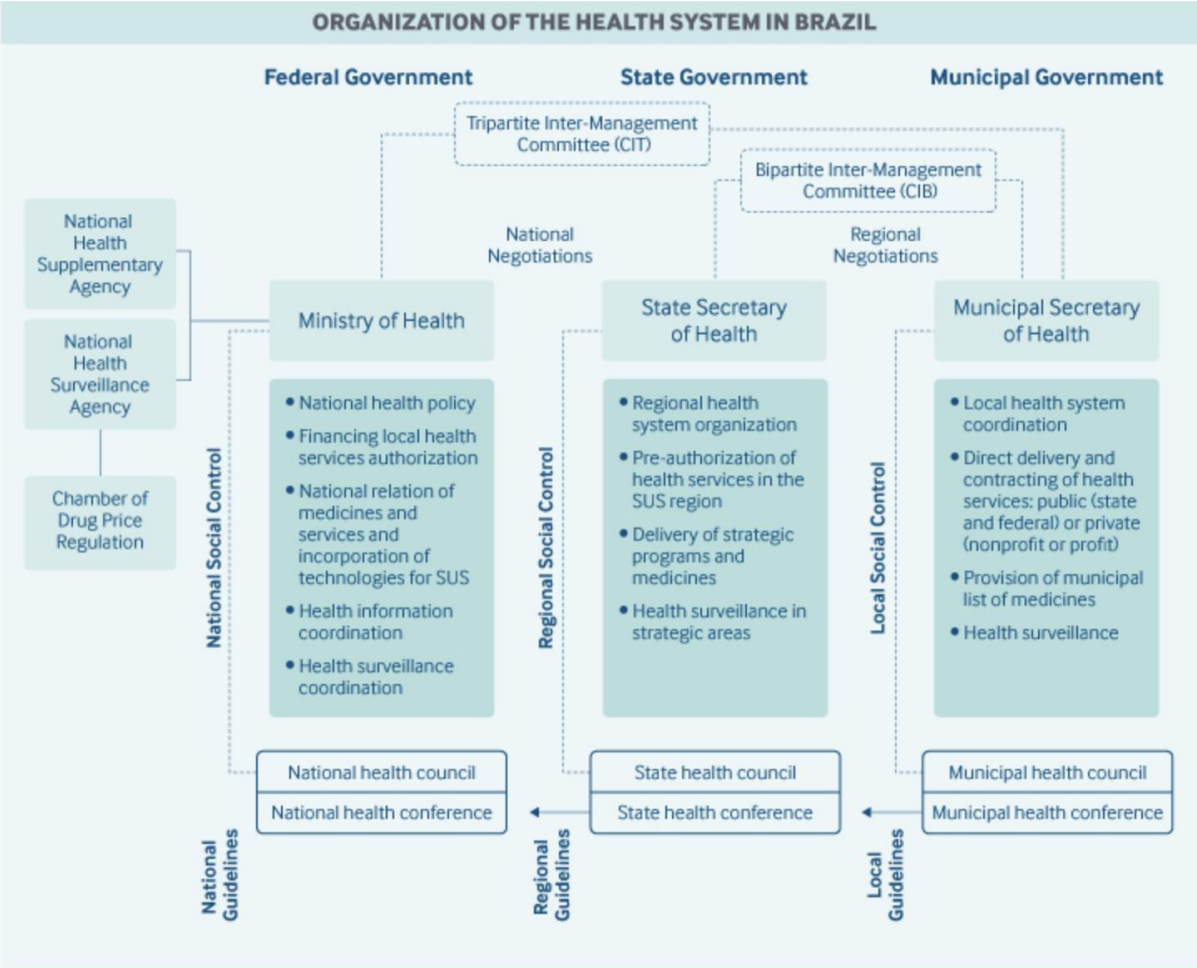


Figure 1: Structure of the SUS, highlighting the three levels of administration (federal, state, municipal), the committees of inter-management, and regulatory bodies. Source: Commonwealth Fund[241]

3.3.2 Community Participation in the SUS

Community participation within SUS is characterised by the active involvement of citizens in the planning, management, and evaluation of health services. This participatory approach is institutionalised through mechanisms such as health councils and conferences, which comprise representatives from the community, health professionals, and government officials. These structures ensure that the voices of

[241] Roosa Tikkanen et al. (eds), 'International Profiles of Health Care Systems 2020' (The Commonwealth Fund, December 2020) https://www.commonwealthfund.org/sites/default/files/2020-12/International_Profiles_of_Health_Care_Systems_Dec2020.pdf accessed 11 March 2025.

representatives of the community are integrated into health policy decisions. The legal basis for this participation is established in Law No. 8.142/1990 and Article 198 of the 1988 Constitution. As I will discuss in the analytical Chapters 6 through 9, the anti-scientific network offered an alternative space for policy-making and social input, which also meant the network received contributions from different communities, health professionals, and government officials. Many of these actors did not occupy roles within the SUS, but within the 'Shadow Cabinet' they had direct access to the President and other Ministers.

Scholars conceptualise this participation as an *institutionalised* form*,* meaning legally established, of democratic engagement in health policy-making and implementation. Coelho[242] frames it as a means to deepen democracy through direct citizen involvement in health policy decisions, while Correia[243] emphasises its role in enabling civil society to intervene in public policies, interacting with the state to define priorities and elaborate action plans. Moreira and Escorel[244] further characterise it as a form of deliberative governance, where citizens actively participate in formulating, managing, and monitoring health policies. These perspectives collectively underscore the SUS's participatory mechanisms as tools for plurality and responsiveness in health governance.

The primary vehicles for community participation in the SUS are Health Councils and Health Conferences.[245] Health Councils are permanent collegiate bodies

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[242] Vera Schattan P Coelho, 'Conselhos de Saúde Enquanto Instituições Políticas: O Que Está Faltando' (2004) 34 Participação e Deliberação: Teoria Democrática e Experiências Institucionais no Brasil Contemporâneo. São Paulo, Editora 255.

[243] Maria Valéria Costa Correia, *Que Controle Social? Os Conselhos de Saúde Como Instrumento* (Editora Fiocruz 2000).

[244] Marcelo Rasga Moreira and Sarah Escorel, 'Conselhos Municipais de Saúde Do Brasil: Um Debate Sobre a Democratização Da Política de Saúde Nos Vinte Anos Do SUS' (2009) 14 Ciência & Saúde Coletiva 795.

[245] Law 8.142/90 (n 229)

that exist at all levels of government - national, state, and municipal. These councils are composed of representatives from various sectors, including government, health service providers, health professionals, and users, with the latter group comprising 50% of the council members. This composition ensures a strong voice for the community in health policy decisions. Health Councils play a deliberative role in formulating strategies and controlling the implementation of health policies, including economic and financial aspects.

Complementing the ongoing work of Health Councils, Health Conferences are held every four years (or extraordinarily when necessary) at each government level.[246] These conferences bring together representatives from various segments of society to assess the health situation and propose guidelines for health policy formulation. The resolutions from these conferences are intended to inform the development of health plans at their respective levels, providing a periodic opportunity for broad-based community input into health policy direction.

The functioning of these participatory mechanisms is further refined by Resolution 453 of 2012 of the National Health Council, which provides detailed guidelines for the creation, restructuring, and functioning of Health Councils. This resolution aims to standardise and enhance the effectiveness of these participatory bodies across the country.[247]

In practice, community participation in the SUS involves a range of activities. These include regular meetings of Health Councils to discuss and deliberate on health policies, plans, and budgets; monitoring of health indicators and service quality by

[246] Ibid

[247] Brazil, Resolution No. 453 of 10 October 2012, 'Approves the National Policy for the Humanization of Health Care and Management in the Unified Health System (SUS)' https://www.conselho.saude.gov.br/resolucoes/2012/Reso453.pdf accessed 6 February 2024.

council members; organisation of Health Conferences to set policy priorities; and participation of council representatives in other health policy forums, including intergovernmental commissions. Despite the effectiveness of the anti-scientific network, there was also significant resistance within Brazilian states and society, particularly through civil society organisations and academic bodies. As I will discuss in Chapter 9, these groups saw the CPI da Covid as an opportunity to exercise counter-power, despite the paralysis of the SUS by the Bolsonaro government.

3.3.3 Relationship of the SUS with the Private Sector

The SUS operates within a framework that incorporates both public and private healthcare providers. This mixed system, inherited from pre-SUS healthcare arrangements, was formalized in the 1988 Constitution, which established the SUS while simultaneously preserving a role for private healthcare initiatives. Article 199 of the Constitution explicitly states that healthcare is open to private initiative, and private institutions may participate in the SUS in a complementary manner, with public services having preference.[248]

The legal framework governing the relationship between public and private providers in the SUS is multifaceted. It primarily consists of Article 199 of the Brazilian Federal Constitution, which establishes that healthcare is open to private initiative and allows private institutions to participate in the SUS in a complementary manner; Articles 24-26 of Law 8.080/1990,[249] which detail the conditions under which private entities can participate in the SUS and establish the preference for non-profit entities; Law

[248] Constituição do Brasil (n 58)

[249] Law No. 8.080/90 (n 228)

9.656/1998,[250] which regulates private health insurance plans and establishes minimum coverage requirements and consumer protections; and more recently, Law 13.097/2015 [251] allowing foreign capital in healthcare services, including hospitals, clinics, and health insurance companies. This legal structure delineates the boundaries and interactions between the public and private sectors within the Brazilian healthcare system.

Operationally, private participation in the SUS manifests in two primary forms: complementary services and supplementary services. Complementary services involve private providers offering services to the SUS under contract when the public sector's capacity is insufficient. These contracts are subject to public law and must adhere to SUS guidelines (Article 24, Law 8.080/1990). Supplementary services, on the other hand, consist of private health plans and insurance operating independently of the SUS but regulated by the National Supplementary Health Agency (Agência Nacional de Saúde Suplementar, ANS). This dual structure creates a landscape where the public sector, represented by the SUS, is responsible for managing the entire system, including regulation of the private sector, while the private sector provides services both within and outside the SUS framework.

The public-private mix in Brazilian healthcare, while potentially increasing overall system capacity, has given rise to several significant challenges. Santos et al.[252] highlight equity concerns, noting that the robust private sector alongside the public system has led to a two-tiered system, potentially exacerbating health inequities. Victora et al.[253] point

[250] Brazil, Law No. 9.656 of 3 June 1998, 'Regulates Private Health Insurance Plans and Other Provisions' https://www.planalto.gov.br/ccivil_03/leis/l9656.htm accessed 6 February 2024.

[251] Brazil, Law No. 13.097 of 19 January 2015, 'Amends the Law No. 9.656 of 1998, and Other Provisions Regarding the Health Insurance Market' https://www.planalto.gov.br/ccivil_03/leis/2015/L13097.htm accessed 6 February 2024.

[252] Isabela Soares Santos, Maria Alicia Dominguez Ugá and Silvia Marta Porto, 'O Mix Público-Privado No Sistema de Saúde Brasileiro: Financiamento, Oferta e Utilização de Serviços de Saúde' (2008) 13 Ciência & Saúde Coletiva 1431.

[253] Cesar Gomes Victora et al., 'Condições de Saúde e Inovações Nas Políticas de Saúde No Brasil: O Caminho a Percorrer' https://www.arca.fiocruz.br/handle/icict/25211 accessed 4 January 2025.

out the issue of resource competition, where private providers often compete with the public sector for human and financial resources, potentially weakening the public system. Regulatory challenges are also prevalent, with Machado et al.[254] emphasising the difficulties in ensuring that private providers contracted by the SUS adhere to its principles and guidelines.

Another critical issue is the phenomenon of double coverage, where many Brazilians have both SUS coverage and private insurance. Paim et al.[255] argue that this leads to inefficiencies and inequalities in resource allocation. Furthermore, Santos et al. (2017) highlight the potential conflict between the profit motive of private providers and the SUS principles of universality and equity.

During the pandemic, Brazil's private sector attempted to compete with the public health system (SUS) in vaccine provision. Congress passed Law 14.125/2021,[256] authorizing private companies to acquire vaccines that had emergency approval from ANVISA independently from the federal government, with President Bolsonaro vocally supporting this initiative. However, these efforts faced significant obstacles. Major vaccine producers like Pfizer and Oxford/AstraZeneca would only negotiate with governments and sell in large quantities. Private companies lacked the logistics and nationwide distribution capabilities needed for effective vaccine delivery.[257] The CPI da Covid later revealed that the Bolsonaro administration had been delaying vaccine

[254] Cristiani Vieira Machado, Luciana Dias LIMA and Tatiana Wargas de Farias BAPTISTA, 'Princípios Organizativos e Instâncias de Gestão Do SUS' (2011) 2 Qualificação dos Gestores do SUS 47.

[255] Paim et al. (n 213)

[256] Brazil, *Lei nº 14.125, de 10 de março de 2021* https://www.planalto.gov.br/ccivil_03/_ato2019-2022/2021/lei/L14125.htm accessed 11 March 2025.

[257] Murilo Fagunes, 'Bolsonaro apoia compra de 33 milhões de doses de vacinas por empresas' (*Poder360*, 25 March 2021) https://www.poder360.com.br/governo/bolsonaro-apoia-compra-de-33-milhoes-de-doses-de-vacinas-por-empresas/ accessed 11 March 2025.

negotiations, ignoring multiple contact attempts from Pfizer.[258] Public criticism mounted against private vaccine acquisition, which many viewed as 'cutting the line' of the public distribution system. The situation culminated in a corruption scandal involving Covaxin vaccine procurement and the Ministry of Health, which ultimately undermined attempts to establish vaccine distribution channels outside the SUS framework.[259]

Recent developments have attempted to address some of these challenges. Law 13.097/2015, which allowed foreign capital in healthcare services, aimed to increase investment and competition in the sector. However, this move has been controversial, with critics like Scheffer[260] arguing that it could further commercialize healthcare, potentially undermining the public nature of the SUS. These elements are relevant because the anti-scientific network, described in Chapter 6, involves a number of actors from the private healthcare sector.

The Pandemic has brought these issues further to public attention. While the SUS provided universal coverage for Covid treatment, demonstrating the importance of a robust public health system, the pandemic also exposed and exacerbated existing inequalities in access to healthcare.[261] Most importantly, there was not a unified response in the country against Covid. While the Ministry of Health advocated for Early Treatment, other entities of the SUS pressured for vaccination and self-isolation. Across state levels there was also disagreement. While the President refused to acquire vaccines

[258] Talita de Souza, 'Lista de e-mails da Pfizer ignorados pelo governo aumenta: são 101 tentativas' (*Correio Braziliense*, 22 June 2021) https://www.correiobraziliense.com.br/politica/2021/06/4932143-lista-de-e-mails-da-pfizer-ignorados-pelo-governo-aumenta-sao-101-tentativas.html accessed 11 March 2025.

[259] BBC N.a., 'CPI da Covid: E-mails mostram que Pfizer fez 101 tentativas de oferta de vacinas ao governo Bolsonaro' (*BBC News Brasil*, 25 de junho de 2021) https://www.bbc.com/portuguese/brasil-57615206 acessado em 11 de março de 2025.

[260] Mário Scheffer, 'O Capital Estrangeiro E a Privatização Do Sistema de Saúde Brasileiro' (2015) 31 Cadernos de Saúde Pública 663.

[261] Rudi Rocha et al., 'Effect of socioeconomic inequalities and vulnerabilities on health-system preparedness and response to COVID-19 in Brazil: a comprehensive analysis' (2021) 9(6) The Lancet Global Health e782 https://pubmed.ncbi.nlm.nih.gov/33857500/ accessed 10 March 2025.

from Pfizer, the State of São Paulo chose to acquire the vaccine Coronavac from Chinese providers. In other words, in this federalist and mixed structure, there were multiple and often conflicting Covid policies in place, and also enabled some resistance to the public policy-making of the federal government

Additionally, it is relevant to introduce how private actors also played a significant role in the anti-scientific network. As mentioned in Chapter 1, major players within Brazil's privatized healthcare sector aligned their strategies with promoting, practicing, and profiting from Early Treatment. This approach was consistent with the privatization and individualization of medical care, reflected in statements by Jair Bolsonaro, such as,

> I'm not prescribing chloroquine to anyone. Look for a doctor. And if the doctor doesn't satisfy you, change doctors. When a guy is selling overpriced beer at a bar, don't you go to another one? Change the bar (Author's translation).[262]

In this setting, not only private physicians, but companies like Prevent Senior and Hapvida became known as places to access Early Treatment. As will be explored in greater detail in Chapter 7, Prevent Senior even released unverified clinical trial results, contributing to the body of bogus evidence supporting Early Treatment. Its executives also maintained close connections with other network actors. The study was extensively shared by the social media accounts of Jair Bolsonaro and his sons, and the CPI da Pandemia highlighted how the healthcare plan executives appeared in live sessions with relevant physicians of the network, such as virologist Dr. Paolo Zanotto. As a result,

[262] Folha de S. P. N.a., 'Bolsonaro sugere que médico que não receita cloroquina para Covid-19 seja trocado' (*Folha de S.Paulo*, 4 September 2020) https://www1.folha.uol.com.br/equilibrioesaude/2020/09/bolsonaro-sugere-que-medico-que-nao-receita-cloroquina-para-covid-19-seja-trocado.shtml accessed 5 January 2025.

Prevent Senior experienced a nearly 15% growth between March 2020 and June 2021, according to the Supplementary Health Agency (ANS).[263]

3.4 Conclusion: The SUS as Democratic Institution and its Vulnerabilities

The Sistema Único de Saúde stands as a remarkable institutional achievement in Brazil's democratic development. Emerging from the re-democratisation movement of the 1980s, the SUS embodied the constitutional commitment to universal healthcare through an institutional architecture designed to balance scientific expertise, democratic participation, and policy implementation across Brazil's complex federal system.

This chapter has traced the historical evolution of public health governance in Brazil, from early initiatives in the early republic through to the comprehensive reforms that established the SUS following the 1988 Constitution. The analysis reveals how the SUS was designed to legitimise health policy through multiple institutional mechanisms: federal coordination across national, state, and municipal levels; community participation through health councils and conferences; and a regulated relationship with private healthcare providers that preserved universal access while accommodating Brazil's mixed healthcare economy.

Yet as robust as this institutional architecture appears, the SUS contains inherent vulnerabilities that were exposed during the Pandemic. The system's federal structure, allowing for regional adaptation, is both the reasons states resisted Bolsonaro's 'Early Treatment' agenda, but also why the country lacked a national coordinated response. The mechanisms for community participation, though designed to enhance democratic legitimacy, did not suffice for groups to seek to influence public policy through these

[263] Poder360 (n 117)

channels. The relationship between public and private healthcare provisions introduces tensions between universal public health objectives and private sector incentives.

When looking specifically at scientific evidence and policy-making, this institutional design pathways for validating scientific knowledge and translating it into policy was vulnerable to networked forms of communication. The anti-scientific network operated outside formal institutional boundaries, leveraging social media and political influence to promote alternative narratives about Covid treatment. To understand how this challenge to institutional legitimacy operated—and how it succeeded despite lacking traditional sources of scientific authority—requires analytical tools beyond conventional institutional analysis. The next chapter introduces a theoretical framework that bridges Manuel Castells' theory of network society with Science and Technology Studies concepts, particularly the work of Sheila Jasanoff, to examine how scientific knowledge gains or loses legitimacy in contemporary networked societies.

Chapter 4

Analysing Institutional Legitimacy in a Scientific Crisis: An STS Framework for Understanding Anti-Scientific Networks

4.1 Introduction

This chapter develops the theoretical framework needed to analyse how Brazil's established health institutions faced unprecedented challenges to their legitimacy, through the reconstruction of scientific knowledge, during the Pandemic. While Chapter 3 detailed the SUS's institutional structure for integrating scientific expertise with democratic governance, this chapter examines why these traditional mechanisms proved vulnerable to anti-scientific networks operating outside formal institutional channels.

To understand how anti-scientific discourse successfully challenged institutional authority, this chapter bridges Manuel Castells' theory of network society with analytical tools from Science and Technology Studies (STS), particularly the work of Sheila Jasanoff. This theoretical synthesis is necessary because traditional analyses of institutional authority, focused primarily on formal structures and procedures, do not fully capture how digital networks enable new forms of knowledge production and validation that can operate beyond institutional boundaries. While Castells provides the overarching framework for understanding how networks challenge traditional institutional power, Jasanoff's concepts offer more specific analytical tools for examining how scientific knowledge is legitimised or contested in public policy-making.

The pandemic revealed new vulnerabilities in how democratic societies validate and implement scientific knowledge in policy decisions, particularly when confronted with rapidly spreading alternative narratives through digital networks. The case of 'Early Treatment' advocacy in Brazil demonstrates that understanding the legitimation of scientific knowledge requires examining both institutional processes and broader social dynamics, including how networked communication enables the construction and circulation of alternative knowledge claims.

This chapter builds the specific analytical framework needed to examine how the anti-scientific network challenged the SUS's institutional authority. To complement Castells' network theory, it draws on four key concepts from Science and Technology Studies (STS) that together explain how scientific legitimacy is constructed and contested in public policy. The chapter begins by exploring the concept of public reason (Section 4.2.2), which provides a framework for understanding how states legitimise their actions through the performance of knowledge-based governance. It then delves into civic epistemologies (Section 4.2.3) to analyse the culturally specific and institutionalised practices through which societies test and validate the knowledge claims that underpin public reason. The analysis demonstrates that these validation processes involve constant social negotiation, which is examined through the concept of boundary work (Section 4.2.4)—the discursive strategies used to demarcate science from non-science. Finally, the chapter focuses on the specific arena of regulatory science (Section 4.2.5) to illuminate how these struggles over knowledge, culture, and boundaries culminate in the translation of scientific claims into concrete policy decisions.

4.2. Beyond Network Theory: The Need for STS Analysis

The preceding chapter detailed how the SUS was designed as more than just a system for healthcare provision – it represents an ambitious attempt to integrate scientific expertise, democratic participation, and public policy for *universal* healthcare. This institutional design makes the SUS a particularly rich site for analysing what Jasanoff calls the 'co-production' of scientific and social order,[264] which provides essential context for understanding the crisis of legitimacy the SUS faced during the pandemic.

The SUS's multi-level structure of health councils demonstrates how Brazilian society institutionalised specific ways of producing and validating health knowledge. These councils represent what Jasanoff would call 'civic epistemologies' in action[265] – formal spaces where different forms of expertise (scientific, practical, and democratic) interact to produce legitimate knowledge claims. Such bodies include, for example, Fiocruz, Instituto Butantan, and ANVISA. This institutional arrangement for knowledge production became particularly vulnerable during the pandemic when alternative networks challenged their authority.

Moreover, the SUS must constantly negotiate the boundaries between public policy and private healthcare services, between scientific and economic imperatives, and between expert and lay knowledge. These negotiations exemplify the concept of 'boundary work' that Jasanoff explores in her research, where the demarcation between roles and fields of expertise, between science and non-science, are constantly being

[264] Jasanoff (n 205)

[265] Ibid

negotiated. During the pandemic, these boundaries were contested as the anti-scientific network attempted to redraw what counted as legitimate medical knowledge.

Finally, the SUS's regulatory framework, particularly through bodies like ANVISA, demonstrates how Brazilian society institutionalised specific approaches to regulatory science. This framework reflects cultural and political choices about how scientific evidence should inform public health decisions. When confronted with the novel coronavirus, these established regulatory procedures were challenged by alternative approaches to evaluating treatments that bypassed traditional validation mechanisms.

Understanding these aspects through Jasanoff's theoretical lens helps explain why the SUS was particularly vulnerable to anti-scientific discourse during the pandemic. The SUS was an institution designed to integrate scientific expertise with social input for democratic governance. However, its legitimacy was affected by a gap between civic epistemologies (how social groups socially construct facts) and how expert bodies were establishing scientific facts about Covid. This gap was instrumentalized by networked forms of communication to support alternative knowledge claims. In the following subsections, I will discuss these key concepts and connect them to Castells' theory, detailing how they integrate in a broader theoretical framework.

4.2.1 The Network in Co-Production and the Legitimation of Science

The SUS, since its inception following the 1988 Constitution, has embodied a remarkable achievement in the co-production of evidence and legitimation of public health policies a significant evolution from historical tensions exemplified by events like the aforementioned Vaccine Revolt of 1904. The rise of anti-scientific discourse during the pandemic threatened this established model by diverting from the SUS towards

different social interests. This phenomenon resonates with Jasanoff's[266] studies on co-production, where scientific knowledge and social order are mutually constitutive and focused on the production of knowledge as a site of the exercise of power. Jasanoff perspectives are used here to expand on Castells' work on legitimacy.

The study of the SUS as an institution through STS methods is particularly relevant for two key reasons. First, given that the case of 'Early Treatment' represents a shift in the '*locus*' of power of policy-making, by seeking out legitimacy in contesting scientific discourse produced by institutions. Second, while Castells' framework helps us understand how digital networks enabled this challenge to institutional authority, Jasanoff's STS methods provide the analytical tools to examine exactly how scientific legitimacy was contested and reconstructed through these networks.

Manuel Castells,[267] in his theory of the network society, discusses legitimacy in the context of the changing dynamics of power and communication in modern societies. Castells argues that the rise of networked forms of communication has reconfigured social organisation and amplified tensions between traditional institutions and emergent network power. In this framework, legitimacy is closely tied to the ability of institutions to engage effectively with diverse and decentralised networks of communication. When defining networked power, Castells states:

> Thus, I suggest that in many instances the power holders are networks themselves, in fact, subnetworks of the networks that organize society. Not abstract, unconscious networks, nor automata, but humans organized around their projects and interests. Note that they are not single actors (individuals, groups, classes, religious leaders, or political leaders), as the

[266] Ibid

[267] Castells (n 52)

> exercise of power in the network society requires a complex set of joint action that goes beyond alliances to become a new form of subject—a networked subject.[268]

This networked subject projects its interests not only through institutional processes, but also through networked interactions. These can mobilise and organise themselves around goals that are in tension with the state, and ultimately they can support solutions that do not follow *legal* legitimacy, but are legitimate from a subject's point of view.

Legitimacy in the context of science and society emerges through the co-production framework, as articulated by Sheila Jasanoff.[269] Co-production underscores the idea that scientific knowledge and social order are continuously shaped by one another, leading to the creation of policies that are both scientifically sound and socially acceptable. Jasanoff posits that for scientific claims to gain legitimacy, they must not only be robust in their empirical foundations but also resonate with societal values and norms. This alignment ensures that scientific knowledge is perceived as relevant and credible by the public, thereby reinforcing its legitimacy. As the author explains:

> Briefly stated, co-production is shorthand for the proposition that the ways in which we know and represent the world (both nature and society) are inseparable from the ways in which we choose to live in it. Knowledge and its material embodiments are at once products of social work and constitutive of forms of social life; society cannot function without knowledge any more than knowledge can exist without appropriate social supports. Scientific knowledge, in particular, is not a transcendent mirror

[268] Ibid

[269] Jasanoff (n 205)

> of reality. It both embeds and is embedded in social practices, identities, norms, conventions, discourses, instruments, and institutions – in short, in all the building blocks of what we term the social. The same can be said even more forcefully of technology. Co-productionist accounts, conceived in this way, avoid the charges of both natural and social determinism that have featured in recent debates[270]

Jasanoff[271] argues that scientific practices and societal norms are mutually constitutive, meaning that science influences and is influenced by social, political, and cultural contexts. This mutual shaping process is crucial for the legitimacy of scientific knowledge and policy decisions. In Castells' framework, Jasanoff's work can be used to inform us about the collaborative and iterative process through which knowledge is produced, disseminated, and validated within both institutional *and* networked structures in their competition for legitimacy and the exercise of power. For institutions to maintain legitimacy in the network society, they must engage with various networked actors, including civil society, media, and other stakeholders. This engagement ensures that the knowledge produced is relevant, transparent, and responsive to the needs and concerns of the networked public, thereby enhancing institutional legitimacy –an aspect which will be central to the final chapters, especially Chapter 8 and 9, of the thesis, where I discuss answers to RQs 3 and 4 and demonstrate that the networked power exerted on institutions has caused institutions to adapt and seek counter forms of network power to resist the mobilisation from the anti-scientific network.

Latour's work, which heavily influences Jasanoff's approach, provides additional theoretical tools for understanding how scientific facts become socially constructed and

[270] Ibid 3

[271] Ibid

contested. His concept of 'factish' construction[272] describes how facts are simultaneously real and constructed, imbued with social and political meaning through their circulation in society. This framework helps explain how anti-scientific networks were able to construct alternative 'facts' about 'Early Treatment' that gained social legitimacy despite lacking scientific consensus.

Furthermore, Latour's[273] analysis of the intertwining of science, politics, and society demonstrates that scientific knowledge is never purely technical but always embedded in social and political contexts. This perspective is particularly relevant for understanding how anti-scientific discourses infiltrated the SUS' decision-making processes, diverting legitimacy from established institutions toward alternative networks of authority. His work complements Jasanoff's co-production framework by highlighting the specific mechanisms through which scientific facts become socially contested. By employing STS approaches, we can examine how scientific evidence is produced, contested, and legitimised within the SUS – and even discuss how the Brazilian experience informs other democracies, as I will do in my Thesis Conclusion in Chapter 10. With these concepts, we can also examine how the manipulation of knowledge production can serve to sway the political context in which it is inserted in, as was the case with misinformation about Covid.

At its core the study of co-production involves examining the institutional practices and discourses through which science and society interact and shape each other. This includes analysing the mechanisms, techniques, and instruments that governments and scientific bodies employ to generate and validate knowledge. Building

[272] Bruno Latour, *Down to Earth: Politics in the New Climatic Regime* (Polity Press 2018)

[273] Bruno Latour, *We Have Never Been Modern* (Harvard University Press 1993)

on co-production, I will lay out four concepts in this Chapter: **public reason**, **civic epistemologies**, **boundary-work**, and **regulatory science.**

For each of these concepts, Jasanoff draws on a range of intellectual traditions and references to articulate the concept of co-production, many of which will not be directly used in this work. She builds on the sociology of scientific knowledge and Science and Technology Studies (STS) to explore how scientific practices and social norms are intertwined. Key references include works by scholars such as Bruno Latour, Michel Callon, and John Law, who have emphasised the constructed and contingent nature of scientific facts. For instance, Callon's[274] work on the 'sociology of translation' emphasises this actor-network idea of continuous negotiation and challenges the notion of 'black boxism' in science, questioning the taken-for-granted nature of knowledge once it is deemed as established and consolidated. Similarly, Law's foundational ideas on the co-production of materiality and sociality argue that social and material aspects of technological systems are mutually constituted in practice.[275]

In summary, public health decisions on treatments their legitimacy from the integration of scientific expertise with public values, a principle central to both Jasanoff's and Castells' theoretical frameworks. The following Section of the thesis will explain the key concepts of Jasanoff's work that will be integrated into this thesis' framework.

I will begin by laying out the concept of Public Reason, which highlights the importance of transparency, inclusiveness, and accountability in policy-making processes which is central to her work.[276] This will be followed by a description of civic

[274] Michel Callon, 'Struggles and Negotiations to Define What Is Problematic and What Is Not' in Karin D Knorr, Roger Krohn and Richard Whitley (eds), *The Social Process of Scientific Investigation*, vol 4 (Springer Netherlands 1980) http://link.springer.com/10.1007/978-94-009-9109-5_8 accessed 4 January 2025.

[275] John Law and Annemarie Mol, 'Notes on Materiality and Sociality' (1995) 43 The Sociological Review 274.

[276] Jasanoff (n 117)

epistemologies, which refers to 'culturally specific, historically and politically grounded, public knowledge-ways'.[277] Next, I will present the concept of boundary work which is a component of the co-production process, as it involves defining the boundaries of science within the broader social order. By delineating what is considered legitimate science, boundary work influences how scientific knowledge is produced and applied in policy contexts. Finally, I will present the notion of regulatory science which advances the discussion of legitimation demonstrating that policy decisions are not only based on reliable and rigorous scientific evidence but instead based co-constructed evidence between expert bodies, policy-makers and civil society. In the chapter conclusion, I will connect this STS approach to the exercise of legitimation complementing Castells' framework on the role of networked communication in shaping public opinion and institutional legitimacy.

4.2.2 Understanding Public Reason in Health Policy

Jasanoff's approach builds upon, but significantly departs from, the foundational work of John Rawls and Jürgen Habermas, reorienting the concept towards empirical analysis of actual governance practices. Jasanoff draws on and extends Rawls' concept of public reason,[278] shifting the focus from abstract philosophical principles to empirical analysis of institutional practices. She argues that public reason is 'what emerges when states act so as to appear reasonable'.[279] This involves examining the 'institutional practices, discourses, techniques and instruments through which modern governments

[277] Jasanoff and Kim (173) 249

[278] John Rawls, *Political Liberalism* (Columbia University Press 1993).

[279] Jasanoff (n 117)

claim legitimacy in an era of limitless risks – physical, political and moral'.[280] By grounding her analysis in concrete practices, the author provides a more nuanced understanding of how public reason operates in specific cultural and institutional contexts.

In the realm of institutional context, Jasanoff acknowledges the importance of Habermas' theory of communicative action and his concept of the public sphere,[281] thought she departs from his idealized vision of rational discourse. Jasanoff focuses on how reason is constructed and performed in specific policy contexts, arguing that 'reasoning comprises the institutional practices, discourses, techniques and instruments through which modern governments claim legitimacy in an era of limitless risks'.[282] In this sense, Jasanoff's approach focuses on a more realistic assessment of how the ideals of rational discourse are translated into concrete governance mechanisms.

Jasanoff expands these concepts in several ways. For example, she emphasises the need to study actual practices of public reasoning in different national and cultural contexts, in contrast to the more normative theories of Rawls and Habermas. She also introduces the concept of 'civic epistemologies,' which will be explored in a later section, to study how different political cultures have distinct ways of generating and validating knowledge for public purposes.[283]

Furthermore, she also emphasises the role of science and technology in shaping public reason, introducing concepts like 'sociotechnical imaginaries' to capture how visions of scientific and technological progress shape public discourse and policy.[284] This

[280] Ibid

[281] Jürgen Habermas (n 66); and *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society* (MIT Press 1989).

[282] Jasanoff (n 117) 5

[283] Ibid

[284] Jasanoff and Kim (n 205)

sits well with how Castells views the role of technology in shifting how society organises itself, particularly in how information and communication technologies reshape public discourse and legitimation processes.

Castells argues that the rise of digital networks transforms the ways in which information is generated, distributed, and consumed, thereby altering the dynamics of power and communication in society. Meanwhile, she also offers tools to examine the specific institutional arrangements through which public reason is enacted, such as advisory committees, regulatory agencies, and courts. Therefore, the practical and applied concept of Public Reason allows us to empirically study the claims of Castells. That is, studying how technology enables the rapid dissemination of information, allowing diverse voices to participate in public discourse and challenging traditional institutional gatekeepers.

Conceptually, the notion of public reason turns an eye to how states demonstrate their competence to govern by showing their ability to gather and interpret relevant information.[285] This process might involve public hearings or detailed policy reports that showcase the state's analytical capabilities, which in the SUS can translate to the multiple Counsels that are held in each federal level, all of which host public hearings and consultations, as previously mentioned. Public reason also allows states to frame their actions in terms that resonate with deeply held cultural values and norms, enhancing their perceived legitimacy.[286]

For instance, environmental policies might be framed in terms of stewardship or national pride, depending on the cultural context. We can also see these phenomena in the social media content circulating in the Pandemic in Brasil. In this country, a mascot

[285] Jasanoff (n 117)

[286] Jasanoff and Kim (n 205)

called Zé Gotinha[287] has been used for several decades throughout many mandates to incentivize vaccination in general and promote the National Programme of Immunization (PNI), after starting to be used in the national vaccination campaign against poliomyelitis in 1986. In 2021 and only months before the official start of the electoral campaign, the soon-to-be candidate and former president Lula questioned the absence of Zé Gotinha in the Covid vaccination campaigns, claiming the figure was 'suprapartisan.'

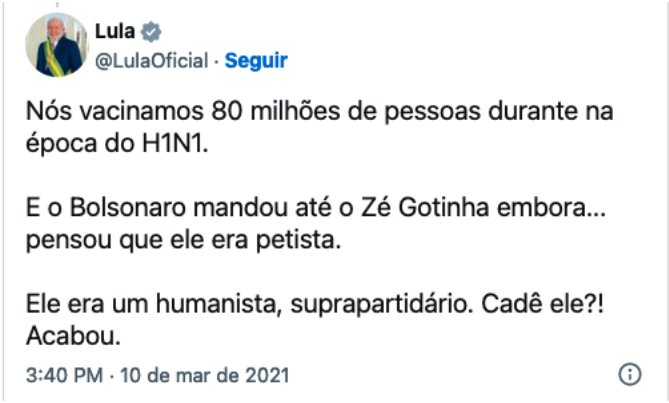


Image 5: Lula criticised the Bolsonaro government, asserting that Zé Gotinha, the vaccination mascot, was 'supra-partisan,' highlighting its role in public health policy and its connection to national pride and identity. Source: Twitter[288]

This symbolism and the overall forms the SUS use to dialogue with the public also entail other aspects of public reason Jasanoff has studied. These include the way states manage uncertainty by acknowledging and addressing complex, ambiguous issues in a way that maintains public trust.[289] This could involve transparent communication about the limitations of current knowledge and the steps being taken to address uncertainties. Another aspect is that public reason processes create opportunities for citizens to scrutinise and challenge state actions, thereby reinforcing democratic

[287] Loosely translated 'Joe Droplet;' named after the polio vaccine

[288] Lula [@LulaOficial], 'Nós vacinamos 80 milhões de pessoas durante na época do H1N1. E o Bolsonaro mandou até o Zé Gotinha embora... pensou que ele era petista. Ele era um humanista, suprapartidário. Cadê ele?! Acabou.' https://x.com/LulaOficial/status/1369674605590421510 accessed 4 January 2025.

[289] Sheila Jasanoff, *The Ethics of Invention: Technology and the Human Future* (WW Norton & Company 2016)

accountability.[290] This might be facilitated through public comment periods on proposed regulations or citizen advisory panels, for example. Finally, public reason serves as a means to reconcile the need for expert knowledge in governance with democratic principles of public participation and transparency.[291] This could involve creating hybrid forums where experts and lay citizens can engage in dialogue on complex policy issues.

Within the dynamics of public reason, four concepts are of particular relevance and will be explained in detail now, in order from broader to more specific concepts. The idea is to zoom into the workings of this discursive process of legitimation in this space negotiated by science, civil society and politics.

4.2.3 Civic Epistemologies, Evidence, and Health Democracy

Civic epistemologies differ from scientific evidence and scientific epistemology in the sense that they are not solely concerned with the empirical validity of knowledge claims but also with their cultural and social resonance. While scientific evidence is grounded in standardised methodologies and empirical verification, civic epistemologies lean on a broader set of criteria for evaluating and integrating knowledge into public discourse and policy, including ethical considerations, public values, and the perceived legitimacy of knowledge sources. Jasanoff defines civic epistemologies as 'the institutionalised practices by which members of a given society test and deploy knowledge claims used as a basis for making collective choices'.[292]

[290] Jassanoff (n 117)

[291] Sheila Jasanoff, 'The Essential Parallel Between Science and Democracy' Seed Magazine (17 February 2009)

[292] Sheila Jasanoff, *Designs on Nature: Science and Democracy in Europe and the United States* (Princeton University Press 2005)., p. 255

In this sense, when the norms and standards of civic epistemologies clash with those of scientific communities, there can be tension. For example, during the Pandemic, different countries exhibited varying levels of trust in scientific guidance, a potential influence by their respective civic epistemologies.[293] In some cases, public scepticism towards vaccines was fuelled by historical distrust in government institutions and differing cultural attitudes towards medical interventions. These tensions, conflicts which highlight the challenges in aligning scientific evidence with public acceptance and policy implementation.

In Sheila Jasanoff's framework of co-production, the concept of civic epistemologies provides a nuanced understanding of how different societies engage with scientific knowledge. In this thesis, Sheila Jasanoff's concept provides a structure to understand how scientific knowledge revolves around a dynamic of co-production, despite its apparent reliance on reason and objectivity only. It also captures the diversity of epistemic practices across different social and political contexts, highlighting how various factors, such as cultural values and historical events, shape the interpretation and application of scientific evidence.

For Jasanoff,[294] civic epistemologies have key elements, such as the methods of knowledge production deemed acceptable in a given society, the processes for validating expertise, the mechanisms for public participation in knowledge-related decisions, and the ways in which scientific disagreements are managed in the public sphere. This results in six dimensions along which civic epistemologies can vary: styles of public knowledge-making, public accountability, demonstration practices, objectivity, expertise, and visibility of expert bodies.

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[293] Sheila Jasanoff, 'A Stress Test for Politics: A Comparative Perspective on Policy Responses to COVID-19' in I. Glenn Cohen et al. (eds), *Routledge Handbook of Law and the COVID-19 Pandemic* (Routledge 2022)

[294] Jasanoff (n 293)

In such process, *production of knowledge* refers to the generation of knowledge within a particular cultural and social context, where the methods, assumptions, and goals of scientific research are influenced by the societal environment. In this regard, *validation of knowledge* involves the processes by which a society determines the reliability and trustworthiness of knowledge. This includes peer review, regulatory assessments, and public debates, which are all shaped by the community's epistemic norms and values. Finally, *use of knowledge* pertains to how knowledge is applied in public policy and governance.[295]

These core elements of Sheila Jasanoff's ideas on civic epistemologies are complementary to Castells' theory because they enable me to analyse how networked discourse influenced the production of scientific knowledge. This topic is central to RQ 1 and 2 (repeated below), and how this affects the legitimation of institutions and accountability around the policy-making of Covid, including the validation of evidence.

> Sub-RQ 1: How did the CPI da Covid reconstruct the anti-scientific network and discourse, including its main arguments?
>
> Sub-RQ 2: How was the adoption of 'Early Treatment' justified by members of the anti-scientific network as the best health measure available during the Covid-19 pandemic to the detriment of other scientifically grounded measures such as vaccination, self-isolation and social distancing?

As I will discuss in Chapter 7, much of the mobilisation to legitimate 'Early Treatment' on scientific evidence aimed at subverting institutionalised practices of knowledge production. For example, there was a shifting of the burden of proof for the

[295] Ibid

adoption of a new drug from demanding proven efficacy in treatment for a condition, to simply having a *potential benefit* from in vitro tests. In this case, the absence of evidence on harms related to the widescale consumption of the drug, and the freedom of doctors to prescribe the treatments they deem the best, were conflated with evidence on the effectiveness of 'Early Treatment' dugs.

This concept of civic epistemologies allows us to turn our analysis to several building blocks of knowledge construction, including the norms and standards (e.g. double-blind studies) that a society uses to evaluate the credibility and legitimacy of knowledge claims – such as embedded cultural, historical, and political values. It also allows us to discuss particular institutions and the roles of scientific bodies, regulatory agencies, and public deliberation forums in shaping and endorsing scientific information. Lastly, it sheds light as well on the ways knowledge is utilised for public policy and decision-making, which will be the object of the discussion in Chapter 8 as the testimonies from policy-makers who testified to the CPI da Covid are analysed.

4.2.4 Boundary Work in Practice

Civic epistemologies, and most important the negotiation around authorities to produce knowledge can be further analysed through the concept of boundary work. Gieryn defined boundary work as the discursive practices scientists employ to demarcate science from non-science, thereby establishing and maintaining their intellectual authority and access to resources.[296] For Jasanoff , to focus on boundary-work is a way to assess the way in which boundaries, such as those between expertise and common

[296] Thomas F Gieryn, 'Boundary-Work and the Demarcation of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists' [1983] American sociological review 781.

sense, and politics, represent a collective commitment to forms of epistemic and political delegation (civic epistemologies).[297] These negotiations, which are fundamentally acts of boundary work, shape and are shaped by a society's civic epistemology.

Central to the concept of boundary work are several key ideas that enrich the understanding of knowledge production and validation. One of these concepts is that of credibility contests, which Gieryn[298] describes as the competition between different groups for epistemic authority. These contests highlight the dynamic nature of scientific authority, emphasising that such authority is not inherent but rather actively negotiated and maintained through social processes. Credibility contests often play out in public arenas, such as policy debates or media discussions, where different groups vie for the right to define what counts as legitimate knowledge.

Another important concept in boundary work is that of boundary objects, introduced by Star and Griesemer.[299] Boundary objects are entities that facilitate communication across different social worlds while maintaining their identity within them. These objects can be physical artifacts, concepts, or practices that are flexible enough to be interpreted differently by various groups, yet robust enough to maintain a common identity across contexts. Boundary objects play a crucial role in facilitating collaboration and knowledge exchange between different epistemic communities, often serving as bridges between scientific and non-scientific spheres.

Complementing the concept of boundary objects is the idea of trading zones, developed by Galison.[300] Trading zones are conceptualized as spaces where different

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[297] Jasanoff (n 117) 12

[298] Thomas F Gieryn, *Cultural Boundaries of Science: Credibility on the Line* (University of Chicago Press 1999).

[299] Susan Leigh Star and James R Griesemer, 'Institutional Ecology, `Translations' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39' (1989) 19 Social Studies of Science 387.

[300] Peter Galison, *Image and Logic: A Material Culture of Microphysics* (University of Chicago Press 1997).

epistemic communities can exchange ideas and collaborate despite differences in language and culture. This concept is particularly useful for understanding how interdisciplinary collaboration occurs and how knowledge is translated across disciplinary boundaries. In the context of civic epistemologies, trading zones can help explain how scientific knowledge is integrated into policy-making processes, often requiring the development of shared languages and practices between scientists, policymakers, and other stakeholders.

The concept of boundary work proposed by Gieryn[301] focuses mainly on the notions of expansion of authority, monopolization of authority, and protection of autonomy as the main forms through which science distinguishes itself from 'non-science' and constructs its authority. When inserted in this thesis's Castellian framework, these aspects are relevant to understanding how networks enable the construction and contestation of scientific authority. I discuss three main dimensions: legitimation of networks, legitimation through networks, and legitimation of and by institutions. In my analysis, the anti-scientific network succeeded in establishing communication and network power through discourse and meaning-sharing, facilitated by the articulation of various actors, including through the capture of bodies within institutional branches. This process sought to define the boundaries that demarcated valid from invalid information for both medical practice and public health policy.

Demarcation refers to the process of establishing clear distinctions between scientific and non-scientific domains. This involves setting criteria and standards that scientific knowledge must meet to be considered legitimate. The demarcation problem, as it is often called in the philosophy of science, has been a central concern for scholars

[301] Gieryn (n 297)

attempting to define the essential characteristics of scientific inquiry, such as Popper[302] and Laudan.[303]

The acceptance of knowledge production as scientific passes through the legitimation and acceptance of scientific authority. Here legitimation encompasses the actions taken to justify and reinforce the authority and credibility of scientific knowledge, being a fundamental part of maintaining the privileged epistemic status of science in society and in policy-making contexts.[304] This includes the use of peer review, methodological rigor, and adherence to ethical standards. These notions are associated, but not identical to perceptions of credibility, which refer to the trustworthiness and reliability of scientific claims. According to Shapin,[305] credibility is established through validation processes within the scientific community and the broader public, and it is essential for the acceptance and application of scientific knowledge in various social domains. These interrelated concepts – demarcation, legitimation, and credibility – form the core of boundary work analysis, providing a nuanced framework for examining how scientific authority is constructed, maintained, and sometimes challenged in different social and institutional settings.

The analysis of boundary work in this thesis is further enriched by Foucault's insights on the relationship between power and knowledge.[306] Foucault's work is particularly relevant to understanding how scientific authority is constructed and maintained through discourse. His concept of power/knowledge helps explain how certain forms of knowledge gain legitimacy while others are marginalized, which is

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[302] Karl Popper, *The Logic of Scientific Discovery* (Hutchinson & Co 1959).

[303] Larry Laudan, *Progress and Its Problems: Towards a Theory of Scientific Growth* (Routledge & Kegan Paul 1977).

[304] Jasanoff (n 118)

[305] Steven Shapin, 'Here and Everywhere: Sociology of Scientific Knowledge' (1995) 21 Annual Review of Sociology 289.

[306] Michel Foucault, *The Archaeology of Knowledge* (Original 1969, Routledge 2013)

crucial for analysing how anti-scientific networks challenged established medical expertise during the pandemic.

Specifically, Foucault's methods of discourse analysis, also employed by Jasanoff, provide tools for examining how different actors compete to establish what counts as valid scientific knowledge, how power relations influence which voices are considered authoritative in scientific debates, and how institutional practices and discourses work to maintain or challenge scientific legitimacy as embedded in discourse as a system of knowledge, language and practices.[307] These analytical tools are particularly relevant for understanding how anti-scientific networks attempted to establish alternative sources of medical authority during the pandemic, challenging traditional institutional hierarchies of expertise. As a relevant part of the empirical analysis of this thesis methodology, they will be better detailed in the next chapter.

These Foucauldian perspectives complement boundary work analysis by highlighting the power dynamics inherent in the demarcation of scientific authority. In the context of 'Early Treatment' advocacy, this helps us understand how anti-scientific networks attempted to redefine the boundaries of legitimate medical knowledge through alternative discursive practices.

4.2.5 Regulatory Science and Policy Legitimacy

As the final step in this conceptual review and close examination is the concept of regulatory science. Regulatory science, in essence, represents a specialised form of boundary work, where the boundaries being negotiated are not just between science and

[307] Don Winiecki, 'The Expert Witnesses and Courtroom Discourse: Applying Micro and Macro Forms of Discourse Analysis to Study Process and the 'doings of Doings' for Individuals and for Society' (2008) 19 Discourse & Society 765; and Foucault (n 274)

non-science, but between different modes of scientific practice oriented towards distinct ends.

Regulatory science is characterised by its focus on producing knowledge that is directly applicable to regulatory decision-making. This orientation distinguishes it from basic scientific research, which may not have immediate policy implications. As Irwin et al. (1997)[308] note, regulatory science is shaped by the demands of policy-making timelines, the need for definitive answers in the face of uncertainty, and the requirement to balance scientific rigor with practical applicability. These constraints often lead to unique methodological approaches and standards of evidence that may differ from those in traditional academic science.

This domain of scientific activity is specifically oriented towards informing regulatory decisions and policy formulation, particularly in areas where scientific knowledge is critical for addressing societal challenges. As Jasanoff articulates in her work 'The Fifth Branch',[309] regulatory science occupies a distinct space between the realms of pure scientific research and policy application, serving as a bridge that translates scientific findings into actionable policy recommendations.

In regulatory science, key elements to be considered are uncertainty and risk assessment. In many regulatory contexts, decisions must be made based on incomplete or evolving scientific knowledge. Regulatory scientists are tasked with not only synthesizing available evidence but also characterising the uncertainties and potential risks associated with different policy options. This aspect of regulatory science aligns closely with what Funtowicz and Ravetz[310] term 'post-normal science,' where traditional

[308] Alec Irwin, Howard Rothstein, Steve Yearley, and Edward McCarthy, 'Regulatory Science—Towards a Sociological Framework' (1997) *Futures* 29(4) 299, 303.

[309] Jasanoff (n 118)

[310] Silvio O. Funtowicz and Jerome R. Ravetz, 'Science for the Post-Normal Age' (1993) *Futures* 25(7) 739, 743.

scientific methods are complemented by broader stakeholder engagement and alternative forms of knowledge production.

The analysis of political decision-making using science is a central concern of regulatory science. This involves examining how scientific evidence is interpreted, framed, and utilised within policy-making processes. Jasanoff's[311] concept of 'serviceable truths' is particularly relevant here, referring to scientific claims that are robust enough to serve as a basis for policy while being flexible enough to accommodate political realities. The production of these serviceable truths often involves negotiation between scientific experts, policy-makers, and other stakeholders, highlighting the socially embedded nature of regulatory science.

Furthermore, regulatory science plays a crucial role in what Wynne[312] describes as the 'public understanding of science.' It often serves as the interface through which scientific knowledge is communicated to the public and policy-makers, shaping public perceptions of scientific authority and credibility. This communication function of regulatory science is a significant aspect of its importance in democratic governance, where scientific justification for policy decisions is increasingly expected and scrutinized.

4.3 Synthesis: An Integrated Framework for Analysis

The theoretical framework developed in this chapter integrates Castells' theory of network society with key concepts from Science and Technology Studies to create a robust analytical approach for examining how anti-scientific networks challenged

[311] Sheila Jasanoff, 'Serviceable Truths: Science for Action in Law and Policy' (2015) 93 Texas Law Review 1723 http://texaslawreview.org/wp-content/uploads/2015/08/Jasanoff.Final_.pdf accessed 10 March 2025.

[312] Brain Wynne, 'Public Understanding of Science Research: New Horizons or Hall of Mirrors?' (1992) 1 Public Understanding of Science 37.

institutional authority during the Pandemic. This synthesis enables a nuanced analysis that goes beyond traditional institutional perspectives to capture the dynamics of networked knowledge production and contestation.

Castells' framework helps us understand how digital networks reconfigure power relations and enable new forms of communication that can challenge institutional authority. His concepts of networked power, communication power, and programmable networks explain how anti-scientific actors could mobilise resources and influence despite operating outside formal institutional structures. However, these concepts alone do not fully explain how scientific legitimacy is constructed and contested in specific policy contexts.

Jasanoff's STS concepts provide the more granular analytical tools needed to examine the specific mechanisms through which scientific legitimacy was challenged. The concept of public reason reveals how the SUS's institutional practices for demonstrating competence and trustworthiness were undermined by alternative narratives circulating through social media. Civic epistemologies help explain how the anti-scientific network was able to rely on alternative sources of information to enrol people to and to confront established scientific bodies, such as the recommendations of the WHO and the evaluation from CONITEC. Boundary work analysis demonstrates how anti-scientific networks attempted to redraw the boundaries between science and non-science around the effectiveness of Early Treatment, challenging traditional hierarchies of expertise and procedures of scientific validation. Finally, regulatory science concepts reveal how the policy application of scientific knowledge became a contested space where institutional procedures were bypassed by alternative networks of influence.

This integrated framework will be operationalised in subsequent chapters through detailed analysis of the anti-scientific network that promoted 'Early Treatment'

in Brazil. The methodological approach, detailed in the next chapter, will examine how this network constructed alternative knowledge claims, how these claims circulated through digital media, and how they ultimately influenced policy decisions despite lacking institutional validation. By applying this theoretical framework to empirical data from the Brazilian case, this thesis contributes not only to understanding this specific instance of scientific contestation but also to broader discussions about maintaining scientific integrity and public trust in an era of networked communication and contested expertise.

This integrated theoretical framework not only provides analytical tools for examining the Brazilian case but also suggests specific methodological approaches for the empirical analysis that follows. The next chapter will detail how this framework informs the research design, data collection, and analytical methods employed to examine the anti-scientific network's operation and impact during Brazil's pandemic response.

Chapter 5:

Methodology

5.1 Introduction

This chapter presents the research design and methodological framework used to examine how an anti-scientific network promoted 'Early Treatment' during the pandemic in Brazil. The central research question is:

> How did the discourses generated by a network largely disconnected from the Brazilian public health institutions system during 2020-2021 misconstrue scientific evidence to legitimise 'Early Treatment' as a response to the Covid-19 pandemic?

To analyse this phenomenon, I integrate two main theoretical perspectives: Manuel Castells' network theory provides tools for understanding how the network operated to spread anti-scientific discourse and side-line the SUS. Sheila Jasanoff's concepts of co-production, boundary-work, and public reason explain how alternative scientific knowledge and political power were mutually constructed to promote 'Early Treatment' as a viable alternative during the pandemic, undermining scientifically grounded solutions and impairing expert bodies within the SUS that have the authority for evaluating and approving new treatments for Covid.

This main theoretical framework is complemented by additional analytical tools. Michel Foucault's concepts of discourse and the 'author function' support the analysis of how authority was constructed through language and rhetorical strategies. Christopher Hood's framework of blame avoidance strategies helps analyse how actors within the network avoided accountability while maintaining influence. Together with the work of Bovens on accountability, these tools provide a comprehensive framework for examining both the structure of the anti-scientific network and the mechanisms through which it operated.

The study draws on four primary data sources. First, documents and testimonies from the Brazilian Senate's Parliamentary Inquiry (CPI da Covid) provide detailed accounts of how key actors promoted Early Treatment. Second, media reports and civil society records capture how the network's discourse circulated in the public sphere. Third, government communications and public statements reveal official attempts to legitimise Early Treatment. Finally, semi-structured interviews with key participants who participated in the exchanges of the CPI da Covid and social media accounts in investigating the anti-scientific network. I will describe the data in detail below.

The Chapter proceeds as follows. Section 5.2 provides an overview of the research design and its alignment with the study's theoretical framework. Section 5.3 details how Castells' network theory guides the analysis of communication patterns and power dynamics. The section also mentions how Foucault's concepts complement this analysis. Section 5.4 explains the application of Jasanoff's concepts to understand the co-production of scientific knowledge and political authority and how these link to Castells' ideas. The section also discusses how Hood's blame avoidance framework complement the primary theoretical approaches. Section 5.5 concludes the methodology chapter and provides a roadmap for the coming data analysis chapters.

5.2 Overview of Research Design and Theoretical Framework

My thesis employs a combination of methodologies to operationalise the theoretical frameworks of Castells and Jasanoff in a single analytical framework. The key methodological approaches employed are:

Network Mapping: Castells' network theory is central to understanding how power circulates within contemporary society through information flows. By mapping the structure of the anti-scientific network, identifying key nodes, and examining communication patterns, this method uncovers the mechanisms through which discourse is spread and legitimised. The network analysis allows for a detailed exploration of the formation and influence of the network, providing insight into how actors bypass traditional institutional structures to assert their message.

Co-production Framework: Jasanoff's concept of co-production guides the analysis of the interaction between scientific knowledge and political power. This framework is essential for understanding how scientific authority and public policy are simultaneously shaped by the network's discourse. By focusing on practices such as boundary work, the invocation of expertise, and the creation of sociotechnical imaginaries, the co-production framework provides a lens to analyse how the network's actors positioned 'Early Treatment' as a legitimate public health intervention.

Next, I offer an overview of the data sources.

5.2.1 Data Sources and Scope

This study draws from four primary categories of data, each selected to shed light on different aspects of how the anti-scientific network constructed and

disseminated its discourse around Early Treatment. The four data sources were: CPI documents; Media records; Governmental documents; and Interviews. The selection and analysis of these sources were guided by the theoretical frameworks of Castells and Jasanoff, with particular attention to how different forms of evidence reveal the network's structure, its discursive strategies, and the co-production of scientific and political authority.

This approach it enables a 'triangulation' of information, allowing the study to verify and contextualise findings across different types of evidence. It also provides access to both public facing and internal discourses, revealing how anti-scientific narratives were constructed and adapted for different audiences.

This multi-source approach aligns with Jasanoff's emphasis on examining how scientific authority is constructed across different social domains. The combination of official documents, personal testimonies, and public communications allows for analysis of how boundary work operates at multiple sites. Similarly, the diverse data sources help to apply Castells' network theory by shedding light on how information flows through different channels and how communication power is exercised through various media. However, the data sources have a few boundaries and limitations:

The temporal scope of the data collection, focusing on the period from March 2020 to December 2021, encompasses the crucial phase of Brazil's pandemic response when 'Early Treatment' emerged as a significant controversy. This timeframe allows for examination of how the network's discourse evolved from initial formation through institutional scrutiny in the CPI.

Below, I will detail the four sources of data, that were briefly introduced earlier in Chapter 1, discussing their selection and sampling processes.

a) Senate's Parliamentary Inquiry (CPI da Covid) Documents and Testimonies

The primary data source comprises the official records of the CPI da Covid, including the 1,288-page Final Report, full transcripts, and video recordings of testimonies. This material was collected directly from the Brazilian Senate's official public archives, ensuring the authenticity of the corpus. The CPI represents a unique and rich data source, as it was a formal institutional arena where the anti-scientific network's actors were compelled to articulate and defend their positions under public scrutiny.

The selection of parliamentary testimonies for in-depth analysis employed a purposive sampling strategy. From over 60 deponents, a core set of testimonies was selected based on their centrality to the 'Early Treatment' controversy. This included the key scientific and medical proponents (e.g., Nise Yamaguchi, Ricardo Zimerman), their most articulate scientific opponents (e.g., Luana Araújo, Natalia Pasternak), and the principal political figures responsible for policy decisions (the four Health Ministers). This selection was designed not for statistical representativeness, but for analytical depth into the central discursive conflict, focusing on the most influential voices as identified by their repeated citation in the CPI's Final Report and in contemporary media coverage.

My analysis focuses on the CPI, but covers a timeframe of events from February 2020 to December 2021, capturing the period when 'Early Treatment' became a focal point of public health discourse. Appendix I provides a list with the names and descriptions of the deponents whose testimonies were analysed. Appendix II provides a list of the Senators involved in the CPI da Covid and their affiliations.

These documents are instrumental in the network mapping process, revealing the interactions between different nodes, their communication patterns, and their roles within the network. The transcripts are also analysed to identify recurring themes, strategies, and rhetorical devices used by the network to frame Early Treatment. They

also serve as a basis for discourse analysis, enabling an exploration of how the network navigated the boundaries between science and non-science, constructed authority, and asserted medical autonomy.

Supplementary materials, such as written documents and correspondence from the institutional response submitted as evidence during the inquiry to Covid, reports by civil society organisations, academic analyses, investigative journalism, memos, social media statements, offer valuable context and help to illuminate the network's communication strategies. I will detail them next.

b) News media and Civil Society Reports

The study incorporates news from the media and reports from civil society organisations to provide a broader context for the public discourse on Early Treatment. Media outlets, including newspapers, television broadcasts, and online news platforms, played a crucial role in disseminating information and shaping public perceptions during the pandemic. These sources capture the public-facing narratives promoted by the network, as well as the responses from scientific institutions and public health authorities.

Civil society records, such as reports from non-governmental organisations and public health advocacy groups, are included to capture the reactions and counter-narratives presented by entities outside of the network. These records provide more refined information about relevant events, such as the increase in social media use by senator during the CPI da Covid, or a compilation of orders passed by the Ministry of Health during the pandemic.

This research relied on over 100 newspaper articles and reports. These reports were selected based on their coverage of key events, statements from influential figures, and debates surrounding Early Treatment. They are analysed to understand how the

network's discourse was portrayed, amplified, or contested in the public sphere at the time. This analysis includes examining how media outlets framed Early Treatment, including the language used, the sources cited, and the extent to which they reflected or challenged the network's narrative.

c) Government Communications and Public Statements

Official and informal communications from government figures, including President Jair Bolsonaro, health ministers, and associated agencies, form another critical data source. These include official statements such as press releases, speeches, and policy announcements related to the government's stance on Early Treatment. The documents were sampled based on their connection CPI da Covid's investigations, either providing complementary information or being under inspection of the CPI. These sources are key to understanding how discourse is framed at the intersection of science, politics, and public policy.

d) Interviews

The study includes a set of two comprehensive interviews with key participants in the CPI da Covid, including members of the Senate and people managing the social media accounts who crowdsourced the investigation. They were conducted after the analysis of the documents and thus provided also an opportunity to validate findings emerging from the documents.

The number of interviews is restricted to two because the purpose of these interviews is to obtain insights about the exchanges that occurred between the Senators from the CPI da Covid and anonymous accounts, but mostly focused on enriching the evidence obtained from the public records of the CPI and the public coverage, outlined in the previous data sources. In this regard, the interviews serve as an element of

validation and specification of the data above, rather than a standalone data source for analysis.

The decision to conduct only two comprehensive interviews reflects specific methodological considerations rather than resource constraints. These interviews served a targeted analytical purpose: validating findings on how the CPI da Covid adapted its investigative procedures to incorporate networked public participation, particularly through social media engagement. The interviewees were selected based on their unique positions as intermediaries between formal institutional processes and informal networked investigation, providing insights unavailable through public documentation.

The first interviewee worked directly with CPI senators on social media strategy and crowd-sourced evidence compilation, offering institutional perspective on how parliamentary investigation adapted to networked communication. The second interviewee managed anonymous social media accounts that became crucial sources of evidence for the CPI, providing network perspective on how digital communities organised around institutional support. These specific roles made them uniquely qualified to address Research Question 4 regarding institutional adaptation to networked communication.

Additional interviews with CPI senators, network participants, or other institutional actors would have provided valuable perspectives but risked shifting analytical focus from network dynamics to individual motivations and experiences. The interviews were already very redundant and limited in terms of bringing additional information within the scope of the thesis.

As such, the research design was initially set to interview multiple people, but the priority on systematic analysis of documented interactions and institutional procedures over individual testimony about motivations or internal decision-making processes made

as such that the interviews were a source of interesting anecdotes, but only confirmed the findings already presented. The extensive documentary record from CPI proceedings provided sufficient evidence for analysing network structure and operation. The multiple hours of testimonial were sufficient to understand the participants views and how they contributed to the discourse on anti-scientific disinformation.

Finally, the politically sensitive nature of the research topic created practical constraints on interview access. Key network participants like former President Bolsonaro did not participate in CPI proceedings and remained inaccessible for academic research. Attempting broader interview recruitment risked compromising research timeline while potentially introducing selection bias toward participants willing to discuss controversial topics on record

The interviews follow a semi-structured format, allowing for open-ended responses while focusing on specific themes related to the research questions.[313]l A sample of the questions orienting the discussion and the participant sheet are attached in Annex III. Topics include the interviewees' involvement in the network, how evidence was gathered and collated, how it was used in the CPI da Covid, their perceptions of how the discourse on 'Early Treatment' was constructed and disseminated.

5.2.2 Limitations and Researcher Positionality

Limitations

The use of public documents, media reports, and social media posts as primary data sources may introduce biases related to the representation of events and narratives. Media coverage may reflect editorial biases, while public statements and social media

[313] Svend Brinkmann and Steinar Kvale, *Doing Interviews* (Sage Publications 2018).

posts are often crafted to project specific images or messages. I will discuss my positionality and how I address these biases through sampling further in this section.

Additionally, while the selected interviews provide valuable internal perspectives, they represent a limited sample and may not capture the full range of viewpoints within the network. The CPI da Covid, however, featured testimony from over 60 deponents, representing a broad range of actors. This thesis focuses on groups and individuals central to the 'Early Treatment' narrative, which does not reflect the entirety of the broader scope of the CPI's investigation. For example, I analysed the testimony of Prevent Senior's director, Pedro Benedetto Batista Júnior, to include how private interests became integrated into the anti-scientific network. However, the CPI also heard testimony from physicians who accused Prevent Senior of coercing them to administer Early Treatment, as well as from the director of the National Supplementary Health Agency (Agência Nacional de Saúde Suplementar, ANS), responsible for regulating healthcare plans in Brazil. These were not included in this thesis, as such extensive detail could detract from the primary focus on the physicians and key authority figures who served as central deponents in the 'Early Treatment' narrative.

Also, three specific methodological limitations warrant acknowledgement. Selection bias in CPI testimonies:

- The Parliamentary Inquiry operated within a political environment where testimony selection was influenced by political considerations. The witnesses called to testify likely represent a curated rather than comprehensive view of the anti-scientific network.

- Political context of testimony: Statements made during the CPI occurred in a highly charged political context where deponents may have been incentivised to

present strategic narratives rather than complete accounts. This context shapes the nature of the evidence and requires careful interpretation.

- Temporal dynamics: This study primarily captures the network at specific moments during the CPI proceedings rather than its evolution over the entire pandemic period. Network relationships likely shifted in response to public scrutiny and changing pandemic conditions.

Additionally, my analytical framework prioritised issues around Early Treatment, which influenced both the selection of deponents and the thematic focus of the discursive analysis. This emphasis inevitably led to the secondary treatment of other questions such as vaccination-related topics, despite their frequent intersection with 'Early Treatment' discourse. While vaccination claims were occasionally significant within the analysed discourse, they were consistently examined through the lens of their relationship to 'Early Treatment' narratives.

While this research documents social media usage by network participants, it does not provide systematic analysis of social media network structures, algorithmic amplification, or viral content patterns. Preliminary investigation of social media networks revealed complex interactions between network participants and broader digital communities, including coordinated content sharing, algorithmic amplification of Early Treatment content, and real-time feedback between social media discussion and institutional proceedings. However, systematic analysis of these phenomena would require computational social science methodologies and platform data access beyond this research scope. Future research should examine how social media algorithms influenced Early Treatment content visibility and how coordinated sharing patterns amplified network messaging.

The focus on CPI proceedings and formal institutional interactions necessarily prioritises visible network activities over informal coordination and private communications. WhatsApp groups, private meetings, and informal influence networks operated alongside documented interactions but remain largely inaccessible to academic research. The research acknowledges this limitation while maintaining that formal institutional interactions provide sufficient evidence for analysing how networks challenge institutional authority through documented mechanisms.

This methodological approach demonstrates how network analysis can be integrated with institutional analysis and discourse analysis to examine complex political phenomena. The combination of systematic document analysis, targeted interviews, and theoretical synthesis provides a framework applicable to similar studies of networked challenges to institutional authority. However, transferability requires adaptation to different institutional contexts, political systems, and technological environments rather than direct methodological replication.

Researcher Positionality

I'll preface the details of the methodology with my positionality as a researcher, particularly given the contentious and politicized nature of the subject matter. As a scholar in socio-legal studies, I approach the topic with a critical perspective on how power, knowledge, and discourse interact in the construction of public policy.

My position as an academic researcher may influence the interpretation of data, especially in analysing statements that challenge established scientific practices and the credibility of scientific institutions. While the study aims to provide a balanced analysis by including multiple perspectives and employing rigorous methods, I produce the research with a particular view of the value of science and scientific organisation in society. Especially, my analytical focus was naturally drawn to institutional dynamics and

discursive legitimation strategies. This disciplinary background may have prioritised certain aspects of the phenomenon over others, such as economic incentives or historical precedents

Below, I present a graph outlining the phases of analysis of this thesis. In the following sections, I also detail specific subsets of data that are used in each part of the analysis and justify how they are sampled and analysed.

5.2.3 Research Phases of Data Analysis

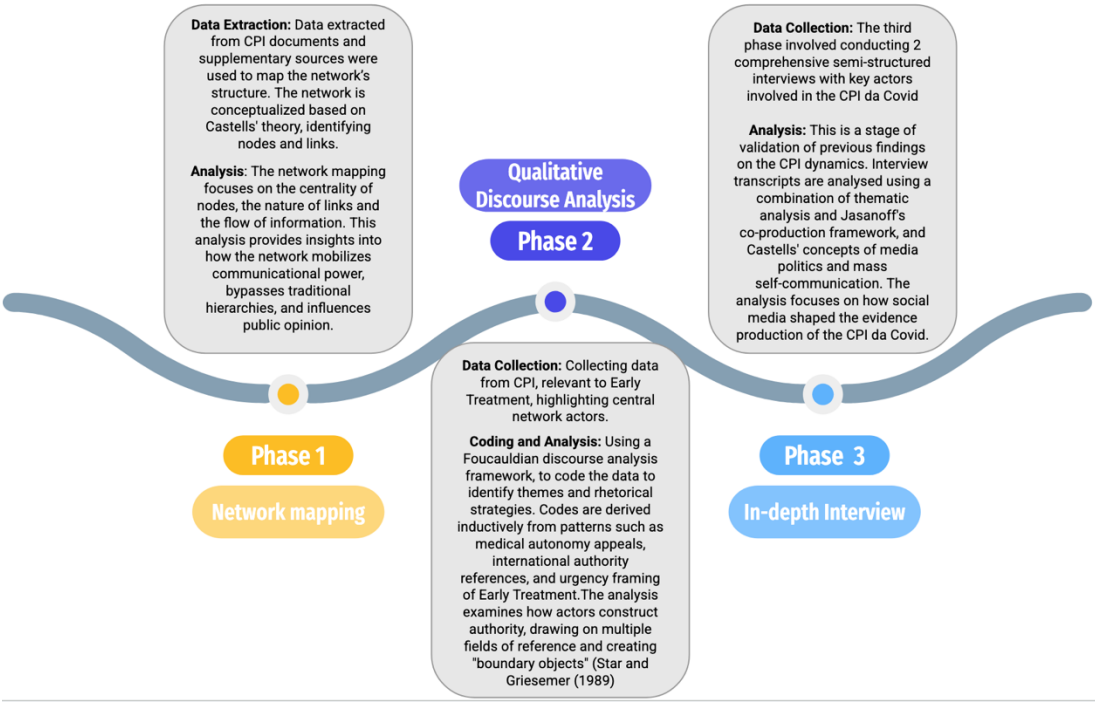


Figure 2: The Three Phases of Data Analysis. Source: Author

The research unfolded in three main phases.

1. **Phase 1: Network Mapping**

a. **Data Extraction:** In the first phase, data extracted from CPI documents and supplementary sources were used to map the network's structure. The network is conceptualized based on Castells' theory, identifying nodes (key actors, organisations) and links (information flows, social connections).

b. **Analysis:** The network mapping focuses on the centrality of nodes, the nature of links (social, technological, ideological), and the flow of information. This analysis provides insights into how the network mobilises communication power, bypasses traditional hierarchies, and influences public opinion.

2. **Phase 2: Qualitative Discourse Analysis**

a. **Data Collection:** The second phase involves collecting data from CPI. Testimonies are selected based on their relevance to the construction and promotion of Early Treatment, focusing on actors identified as central to the network.

b. **Coding and Analysis:** Using a Sheila Jasanoff's concepts for analysis, the data are coded to identify themes and rhetorical strategies. Codes are developed inductively based on observed patterns in the discourse, such as appeals to medical autonomy, references to international authorities, and the framing of 'Early Treatment' as an urgent necessity. The analysis examines how actors construct authority, drawing on multiple fields of reference and

creating 'boundary objects' to blur distinctions between scientific and non-scientific claims.[314]

3. **Phase 3: In-depth Interviews**

    a. **Data Collection**: The third phase involved conducting two semi-structured interviews with actors who participated in the CPI da Covid and participated in social media mobilisations around the CPI, discussed in Chapter 9. The interviews are designed to provide deeper insights into how the CPI da Covid operated and its relationship with a broader public discussion

    b. **Analysis**: Interview transcripts are analysed using Castells' concepts of network society, particularly 'networked state' and 'mass self-communication'. This analysis seeks to understand how the institutional processes of the CPI da Covid adapted with internet communication to leverage network power against the anti-scientific network.

The next Sections describes how the key conceptual frameworks were employed.

5.2.4 Scope Delimitation and Exclusion Decisions

This research required strategic decisions about data inclusion and exclusion to maintain analytical focus while acknowledging significant parallel developments during Brazil's pandemic response. The decision to centre analysis on the CPI da Covid proceedings while excluding other institutional responses reflects both theoretical and practical considerations that shaped the study's boundaries.

[314] Star and Griesemer (n 300)

The exclusion of Supreme Court case law stems a deliberate analytical choice despite the Court's significant role in pandemic governance. Between March 2020 and December 2021, the Supreme Federal Court issued thousands of decisions related to pandemic response,[315] including crucial rulings on federal-state authority (ADI 6341/2020), mask mandates (ADPFs 714, 715 e 718), and vaccination requirements (ADIs 6586 and 6587). These decisions provide important insights into institutional responses to the anti-scientific network's influence and how science was being disputed in institutions, and ultimately litigated. However, including systematic analysis of Supreme Court jurisprudence would have shifted the theoretical focus from network analysis to constitutional law interpretation, requiring different methodological approaches and theoretical frameworks. The Court's decisions primarily addressed federal-state competency disputes rather than the specific mechanisms through which networks challenged scientific authority, making them tangential to this study's core research questions about networked power and institutional legitimacy.

In fact, the STF has a history of decisions where they defer to the relevant authority of the public health system on matters related to drug approval and expertise. One such case is the lawsuite over the 'caner pill', the medication called phosphoethanolamine which some preliminary studies pointed to the effectiveness in curing cancer. The court decided to follow Anvisa's recommendations (ADI 5.501/DF, STA 828/SP). Most importantly, what justifies narrowing the scope and studying the pandemic is the fact that the Court this time was deciding on another basis, as ANVISA and CONITEC where unresponsive. Most importantly, the analysis of the CPI da

[315] CONASS, Pesquisa aponta tendências do STF nas decisões relativas à pandemia (Conass) (consulted 26 July 2025) https://www.conass.org.br/pesquisa-aponta-tendencias-do-stf-nas-decisoes-relativas-a-pandemia/

Pandemia, a proceeding from the Legislature, allows a deeper analysis of the relationship between disinformation and politics, especially under the lens of networks.

Similarly, this research excluded systematic analysis of state-level responses to federal Early Treatment promotion. States like São Paulo and Rio Grande do Sul implemented independent vaccine procurement strategies and explicitly rejected federal Early Treatment protocols. While these responses demonstrate institutional resilience against networked pressure, analysing state-level variation would have required comparative federalism methodologies beyond this study's network-focused theoretical framework. The decision to maintain focus on federal-level network operations enabled deeper analysis of how the anti-scientific network operated within Brazil's primary public health institutions.

The exclusion of detailed social media network analysis represents another strategic boundary. While this research documents social media usage by network participants, it does not provide quantitative network analysis of social media connections, algorithmic amplification patterns, or viral content spread. Such analysis would require different methodological approaches, including computational social science techniques and platform data access that proved unavailable for this research timeframe. Instead, this study treats social media as one channel through which network participants exercised communication power, focusing on how social media content was integrated into formal institutional proceedings rather than analysing social media networks as independent phenomena.

In order to mitigate biases and maintain rigour, I will outline next how data was sourced. In the next two Sections, I discuss how the concepts from Castells and Jasanoff were operationalised.

5.2.5 Source Selection, Bias Management, and Validation

This research employed systematic approaches to source selection and bias management to ensure analytical robustness while acknowledging inherent limitations in studying politically contested phenomena. The source selection process operated through multiple stages designed to balance comprehensiveness with analytical focus while maintaining methodological transparency.

a. **Parliamentary Testimony Selection**: The selection of twenty CPI da Covid sessions for detailed analysis followed specific criteria designed to capture network dynamics while maintaining analytical manageability (each session analysed contains more than 8 hours do intense dialogue). Sessions were selected based on three factors: relevance to Early Treatment promotion or opposition, inclusion of key network participants identified through preliminary analysis, and ensuring a balanced number of pro and anti- Early Treatment deponents on the key themes of analysis (i.e. scientific evidence and political use of evidence). This process excluded sessions focused primarily on vaccine procurement corruption or administrative failures unrelated to scientific discourse manipulation. While these exclusions limit comprehensive understanding of all CPI activities, they enabled focused analysis of how scientific authority was contested and reconstructed through institutional proceedings.

b. **Bias Management Strategies**: The research acknowledges multiple potential bias sources and employed specific strategies to address them. Document selection bias was managed through inclusion of materials from both network supporters and critics of Early Treatment, ensuring analytical balance between competing perspectives. Temporal bias was addressed by maintaining chronological analysis spanning the entire pandemic period

rather than focusing on dramatic moments or particular time periods. When relevant information appeared after the 2020-2021 windows, I mention them in the discussion as one of the consequences of the events, and not during the analysis. Political bias was managed through focus on documented interactions and institutional procedures rather than political outcomes or electoral implications.

c. **Discourse Analysis Methodology**: The discourse analysis employed modified Foucauldian approaches adapted for institutional documents and political testimony. As such, this should not be mistaken as the quantitative approach of social media discourse analysis, which uses methods such as natural language processing techniques (e.g. sentiment analysis). Analysis focused on three dimensions: authority construction through appeals to expertise, boundary work between scientific and political domains, and strategic ambiguity in institutional positioning. Coding procedures identified recurring rhetorical patterns, appeals to different forms of authority, and strategic use of uncertainty in testimony. Inter-coder reliability was maintained through systematic review of coding decisions and theoretical consistency across analytical chapters.

d. **Social Media Content Selection**: Social media content analysis focused on materials referenced during CPI proceedings, studies identified during the literature review, or produced by identified network participants rather than comprehensive social media monitoring. Direct analysis of social media publications was done to complement Foucauldian discourse analysis, qualitatively, and not under specific social media monitoring methods. This approach ensured direct relevance to institutional proceedings while acknowledging limitations in capturing broader social media dynamics.

> Content was selected based on institutional relevance and/or direct reference during the CPI da Pandemia, rather than viral reach or engagement metrics, reflecting the study's focus on institutional impact rather than general public opinion formation.

The collection and analysis of CPI da Covid data required systematic approaches to ensure accuracy and completeness while acknowledging the politically charged nature of the proceedings. Data collection procedures were designed to capture both formal institutional interactions and informal network communications that influenced parliamentary investigation.

Regarding the access to Data, the CPI proceedings are publicly available through the Senate's official website, providing complete transcription records, submitted documents, and audiovisual recordings of all sessions. This research utilised multiple data formats to ensure accuracy: official PDF transcripts for systematic analysis, video recordings for contextual verification, and submitted documentary evidence for supporting analysis. Cross-referencing between these sources enabled identification and correction of transcription errors or omissions in official records.

The accuracy of CPI transcripts was verified through comparison with audiovisual records for key testimony segments analysed in detail. This process identified minor transcription errors and occasional omissions of interruptions or procedural discussions, but confirmed substantial accuracy of content analysis. Where discrepancies emerged between transcripts and audiovisual records, the research prioritised audiovisual evidence while noting discrepancies in analytical footnotes.

The CPI da Covid investigation generated extensive documentation beyond formal hearings, including submitted evidence, technical reports, and correspondence between participants. This research focused on formal testimony proceedings while

incorporating submitted documents when referenced during hearings. This approach ensured analytical coherence while acknowledging that complete analysis of all CPI-generated materials would exceed doctoral research scope.

The politically contested nature of CPI proceedings required careful attention to potential bias in both testimony content and institutional procedures. Testimony analysis focused on documented claims and supporting evidence. Also, the main deponents on the validity of Early Treatment were selected by the CPI hearings as a dialectic process, with equal number of deponents, and therefore every deponent was interrogated and had equal chances of presenting their version and submitting their evidence. The research treats testimony as evidence of discursive strategies and authority construction rather than factual claims about events, enabling analysis of network communication patterns while avoiding political judgment about testimony veracity.

5.3 Operationalising Castells' Network Theory (Chapters 6 and 9)

This thesis applies Castells' theory to map and analyse a *socio-political* network, which must be distinguished from the social media networks that it utilised. While a social media network can be quantitatively mapped based on platform architecture (e.g., follower connections on Twitter), a socio-political network is defined by a shared 'programme'—in this case, the promotion of 'Early Treatment'. Its connections are the flows of communication and influence across multiple channels, including formal meetings, public endorsements, and social media interactions.

The network mapping in Chapter 6 was constructed by systematically coding the CPI's Final Report and supporting testimonies for documented interactions between

actors. This qualitative approach identifies the key nodes and the nature of their relationships, revealing the structure of influence rather than just the flow of information. This method allows for an analysis of how a diverse set of actors from politics, medicine, and the private sector cohered around a common political project.

5.3.1 Overview

Chapter 6 integrates a methodological approach informed by Manuel Castells' theoretical framework to explore the empirical findings on the anti-scientific network advocating for 'Early Treatment' during the Pandemic in Brazil. The methods employed are designed to uncover the mechanisms through which this network exercised communication power, fostered cohesion, and influenced public discourse and policy.

In Chapter 9, after the in-depth analysis of anti-scientific discourse, I refer back to Castells' theory to understand the institutional adaptations that the CPI da Covid underwent to responder to the anti-scientific network's communication power. In this analysis, I refer to complementary concepts previously discussed in Chapter 2, especially mass self-communication and networked state to discuss the role of specific senators in promoting an adaptation of the CPI da Covid into a crowdsourced investigation.

The network is conceptualised as a fluid and dynamic structure, where nodes include a variety of actors. In the case of the antiscientific network analysed, these are mostly focused on politicians, physicians, scientists, media organisations, and private entities, such as medical insurance providers and retail companies. Each node's influence within the network is determined by its centrality and its ability to control or disseminate information, which is explained in greater detail in Chapter 6. Castells emphasises that power in the network society is not concentrated in one location but distributed across various interconnected nodes. Therefore, the analysis focuses on identifying the key actors, their roles, and the nature of the connections within the network.

The study draws on Castells' idea of 'programmes' within networks, which refers to sets of rules or strategies that guide the behaviour of nodes. In the context of the anti-scientific network, these programs manifest as communication strategies that legitimise 'Early Treatment' and undermine conventional scientific authority. The network's communication power is exercised through various means, including social media, public testimonies, and government policies, facilitating the construction of a discourse that contests mainstream scientific recommendations for dealing with Covid.

The analysis identifies the primary nodes (e.g. government figures, medical professionals) and explores how they interact, exchange information, and create and reinforce the network's discourse. As per Castells' framework, I have not exhaustively mapped the network, as its boundaries are inherently fluid and its size potentially includes anyone who reproduces its discourse. However, identifying key nodes as established through an analysis of the CPI da Covid is crucial to understanding their roles and the nature of their connections within the network and in promoting Early Treatment. Methodologically, identifying the network entails coding the data for mentions of individuals, institutions, and groups associated with the drugs and ideas which are comprised in the promotion of Early Treatment.

5.3.2 Key concepts and analytical framework applied

5.3.2.1 Programme

In analysing the programme, I discuss how the anti-scientific agenda was framed and operationalised, focusing on Jair Bolsonaro's role in programming the network. For example, Bolsonaro's televised addresses highlighting the production of hydroxychloroquine by the Brazilian Army were examined as part of this analysis.

As a form to complement Castells' network mapping, discourse analysis was employed to examine the rhetoric and framing strategies used by the anti-scientific network to promote Early Treatment. Drawing on Michel Foucault's[316] conceptualisation of power and discourse, this method focused on understanding how language was used to construct, reinforce, and disseminate authority within the network.

Key components of the analysis included framing techniques that revealed how narratives were constructed to appeal to diverse audiences. For example, Bolsonaro frequently juxtaposed economic arguments with public health recommendations, framing 'Early Treatment' as a cost-effective solution in a country that 'could not stop'. Selective and misleading references to scientific studies were also central to the network's strategy of constructing legitimacy. An illustrative example includes the repeated citation of anecdotal evidence from international proponents like Didier Raoult, aligning with Foucault's insights into the power-knowledge nexus.

The concept of the 'author function' in Foucault's theory[317] is applied to examine how certain individuals within the network are constructed as authoritative voices. This aspect of the analysis identifies the roles that key figures—such as physicians, politicians, and scientists—play in shaping the discourse around 'Early Treatment.' The method involves classifying statements that establish the identity of these figures as experts. For instance, when a physician references their clinical experience or their professional autonomy in making treatment decisions, the analysis codes these statements as establishing the 'author function.' By highlighting the ways in which these figures position themselves within the discourse, this thesis reveals how authority is constructed not merely through formal scientific validation but through strategic invocation of

[316] Foucault (n 307)

[317] Michel Foucault, 'What is an Author?' (1969) https://www.open.edu/openlearn/ocw/pluginfile.php/624849/mod_resource/content/1/a840_1_michel_foucault.pdf accessed 10 March 2025.

personal experience and professional identity. This process of constructing legitimacy is central to the network's discourse, allowing it to challenge mainstream scientific recommendations.

Additionally, the network's messaging often contained internal contradictions, such as promoting scientific validity while undermining established scientific processes. For instance, Bolsonaro's public dismissal of WHO guidelines contrasted with his emphasis on Brazil's military laboratory producing hydroxychloroquine as a 'scientific' endeavour. Foucault's notion of discursive formations provided a framework for understanding these contradictions as strategic tools.

5.3.2.2 Network Analysis

By mapping the network**,** I identified the key nodes, their interactions, and the structure of the anti-scientific network, drawing on documented meetings and media interactions. The mapping process analyses the role of specific nodes in the network and how each group participating in the network contributes to anti-scientific discourse.

The analysis combined a meticulous reading of The Final Report of the CPI da Covid with the support of NVivo software,[318] which was used to mark the relationships that the CPI identified between actors. Subsequently, a directed graph was constructed to visualise the network and its interactions using Gephi[319] through a targeted approach of network visualisation techniques and methodologies.[320] Actors were identified and categorised based on their roles within the network, which included medical-scientific authorities, public officials, private sector representatives, and hybrid nodes who bridged institutional and anti-scientific spheres. For instance, Nise Yamaguchi was identified as a medical-scientific authority, participating in multiple meetings with public officials to

[318] QSR International, *NVivo 12* (2018) https://www.qsrinternational.com accessed 7 October 2023.

[319] Gephi Consortium, *Gephi 10.1* (2022) https://gephi.org accessed 7 October 2023.

[320] Raquel Recuero, *Introdução à análise de redes sociais online* (EDUFBA 2017).

advocate for Early Treatment. Relationships between nodes were analysed to understand the flow of influence and resources within the network, with directed edges representing interactions such as endorsements, collaborations, or mutual support. Documented exchanges between Prevent Senior executives and government officials, for example, highlighted mutual reinforcement of pro-Early Treatment narratives.

Also, network metrics of centrality were used to evaluate the influence of specific nodes over the rest of the network, identifying key actors based on their extensive connections within the network. Jair Bolsonaro's prominence as a central node was particularly evident, reflecting his repeated interactions with various actors across categories, including physicians and political supporters. Gephi's graphical functions were then utilised to construct a visual representation of the network, with nodes color-coded by category and edges weighted to reflect the strength or frequency of interactions. The resulting network graph depicted Bolsonaro's connections with hybrid nodes such as Eduardo Pazuello and institutional bodies like the Ministry of Health, visually reinforcing the centrality of his roe within the network.

5.3.2.3 Communication Power

Finally, from this reconstruction I present the key effect of the anti-scientific network, communication power**.** I use this concept to discuss how the antiscientific discourse fostered public adherence to the network's goals. This included studying the cascading effect of social media posts originating from central figures like Bolsonaro, coordinating in spaces external to the SUS, such as the 'Shadow Cabinet'.

Castells' framework emphasises that power in modern society is distributed through communication flows within networks, in tension and opposition to concentrated traditional hierarchical structures. The Shadow Cabinet is a rich case for understanding how the informal network space opposed itself to the SUS.

5.3.3 Specific Data Analysed Using Castells' Key Concepts

Regarding the specific data for the reconstruction of the network, Chapter 6 focuses on The Final Report of the CPI da Covid as a key piece of the primary data source. The report contains 1288 pages and details relationships, interactions, and testimonies, constituting the final archives of the CPI da Covid. For the network mapping, Sections 7.1 and 7.3 of the Final Report were especially critical. These sections focus respectively on the Shadow Cabinet (7.1) and the promotion of 'Early Treatment' and other ineffective drugs (7.3). The complementary material of public statements, press releases, and others mentioned above was used to complete the reconstruction of the anti-scientific network (i.e. Public statements, press releases, and social media content from key actors, especially Jair Bolsonaro For instance, Bolsonaro's weekly live streams on Facebook and direct social media endorsements were particularly scrutinized).

Using the data set out below, Chapter 6 reconstructs and discusses the three main elements of Castells' network theory, presented briefly in the previous section. In-depth case analyses of prominent nodes within the network, performed in Chapter 6, provided insight into their specific roles and interactions. These nodes were influential in the anti-scientific network, setting the objectives, connecting different networks. Understanding them gave insight into the inner workings of the network:

- **Jair Bolsonaro**: The analysis examined Bolsonaro's leadership in framing 'Early Treatment' as part of his broader political program. His public endorsements of chloroquine, promotion of military production of the drug, and strategic use of televised addresses exemplified his role as a central programmer of the network.

- **The Shadow Cabinet and Parallel Meetings**: Focus was given to informal advisory structures, such as those led by Congressman Osmar Terra and Dr. Nise Yamaguchi. These meetings were disconnected from official public health frameworks but were instrumental in promoting Early Treatment. The term 'shadow cabinet', coined during these interactions, highlighted the covert nature of their operations.

- **Nise Yamaguchi and Medical Authorities (e.g. CFM)**: Yamaguchi's influence within the network was evident in her frequent appearances in media and participation in meetings with government officials. Her medical credentials were leveraged to provide an appearance of scientific credibility, despite the lack of robust evidence supporting Early Treatment. Similarly, the Federal Council of Medicine (CFM), played an important role insulating 'Early Treatment' recommendations from legal liability.

- **Hybrid Nodes**: General Eduardo Pazuello, as Minister of Health, represented a hybrid node bridging formal public health institutions and the anti-scientific network. His endorsement of 'Early Treatment' protocols and public appearances alongside Bolsonaro demonstrated the integration of network goals into official policies.

Castells' network theory is complemented by Sheila Jasanoff's concepts of co-production and boundary work, providing an understanding of how scientific knowledge and policy are mutually constructed within networked power dynamics. The anti-scientific network's communication power directly influences the co-production process, shaping public understanding of Covid treatment and influencing policy decisions. This methodology will be discussed below, in the next subsection.

5.4 Jasanoff's Analytical Framework and Methods (Chapters 7 and 8)

5.4.1 Overview

Jasanoff's co-production framework asserts that scientific knowledge and public policy are mutually constructed, emphasising that the production of scientific facts cannot be separated from the political, cultural, and social contexts in which they emerge. This framework is particularly suited to analyse how political figures and other actors within the anti-scientific network in Brazil constructed their discourse around Early Treatment, framing it as legitimate despite the lack of scientific consensus and also used political influence to shift the appearance of validity of scientific evidence. The methods involve examining how political actors mobilise scientific authority selectively, engage in boundary work, and frame sociotechnical imaginaries that align with their political goals.

In a broader sense, the study uses Jasanoff's notion of sociotechnical imaginaries to explore the visions of society and science that the network promotes through its discourse.[321] Sociotechnical imaginaries are collective visions of desired futures that shape both scientific development and social order. The analysis involves identifying the imaginaries embedded in the network's rhetoric, such as the framing of 'Early Treatment' as an *ethically* responsible response to a public health crisis and as a *symbol of medical freedom*. This part of the analysis focuses on how the network aligns 'Early Treatment' with values like autonomy, nationalism, and resistance to institutional authority, projecting an image of science that supports its political and ideological goals.

[321] Jasanoff and Kim (n 205)

Section 5.4.2 discusses the methods applied in Chapter 7, looking at how actors within the anti-scientific network selectively invoked scientific evidence and principles of medical autonomy to legitimise 'Early Treatment' while simultaneously undermining mainstream scientific authorities. This involves a detailed examination of how boundary objects, such as 'medical autonomy' and 'clinical experience', are deployed in discourse to create a space where 'Early Treatment' is framed as scientifically viable solution for the pandemic. By coding instances where actors engage in boundary work – asserting, contesting, or blurring the lines between different domains of expertise – the study reveals how the network establishes an alternative epistemic authority. This analysis draws from the CPI transcripts, focusing on how political figures present scientific uncertainty as a rationale for promoting Early Treatment, thereby constructing an ambiguous boundary not science that challenges established scientific consensus, as referred to in WHO documents.

Building upon the analysis of co-production, this study employs Jasanoff's concepts of Public Reason and Boundary Work to examine how scientific knowledge was mobilised in the network and contested in Brazil's Covid response. These concepts provide a framework for understanding how state actors and the anti-scientific network attempted to legitimise their actions and influence public health policy.

Section 5.4.3 turns to using Jasanoff's framework to discuss how political actors used anti-scientific discourse for blame avoidance. Jasanoff explains how expertise functions through three interconnected components: the body of scientific knowledge, individual experts, and institutions of advice-giving. Each component has distinct vulnerabilities that can be exploited. This framework helps reveal how actors can selectively leverage different aspects of expertise while undermining its intended function in policy decisions. For instance, when analysing testimony from health officials, we can

trace how they strategically shifted between emphasising institutional authority and claiming to speak as individual experts.

Hood's blame avoidance framework complements this analysis by identifying specific strategies through which actors create distance between decisions and accountability. The framework's three categories – presentational, agency, and policy strategies – help map how officials constructed systems of deniability while maintaining influence over health policy. This combination of frameworks enables examination of both the mechanisms through which scientific authority was manipulated and how responsibility for those manipulations was systematically avoided.

5.4.2 Manufacturing Scientific Legitimacy

This is the main focus of Chapter 7, which applies Jasanoff's concepts of co-production to understand how the anti-scientific network created alternative frameworks for what should be considering 'scientific'. In Section 5.4.3 I discuss the concepts and analysis of the political activity based on this anti-scientific discourse, which is at the heart of Chapter 8.

5.4.2.1 Co-Production

Co-production, developed by Sheila Jasanoff,[322] analyses how scientific knowledge and social order are jointly constructed. This concept moves beyond seeing science as purely objective truth-finding to reveal how scientific claims both shape and are shaped by social worlds. In the context of regulatory science and policy-making, co-production helps explain how scientific knowledge becomes established and validated through social and institutional processes.

[322] Jasanoff (n 205)

The analysis employed co-production to examine how Brazil's anti-scientific network systematically reconstructed what counted as valid evidence and legitimate expertise during the Pandemic. This concept proved particularly valuable for understanding three key aspects of how scientific authority was built.

First, co-production illuminated how the network pushed for alternative methods of validating facts while maintaining scientific legitimacy. For example, when Ricardo Zimerman presented his interpretation of evidence-based medicine to the CPI, he was not simply challenging evidence hierarchies – he was actively participating in the (co-)production of new standards for evaluating medical evidence. His statement that 'evidence-based medicine is not just about randomised, double-blind, placebo-controlled clinical trials'[323] demonstrates how scientific standards were being actively reconstructed through social processes.

Second, the concept revealed how clinical authority was jointly negotiated through multiple channels. When Mayra Pinheiro testified that 'in a situation of war, we use all available evidence',[324] she was engaging in co-production by simultaneously invoking scientific authority while redefining what counted as valid evidence. This demonstrates how scientific knowledge and social authority were being jointly constructed through careful discursive work.

Third, co-production helped analyse how the network transformed uncertainty into a tool for advancing particular agendas. For instance, when network members

[323] Senado Federal do Brasil, CPI da Pandemia, 'Reunião nº 10045, 2021', meeting held on 17 June 2021, dedicated to the testimonies of physicians Ricardo Ariel Zimerman and Francisco Eduardo Cardoso Alves, https://legis.senado.leg.br/atividade/comissoes/comissao/2441/reuniao/10045 accessed 8 January 2025 (Translation by author).

[324] Senado Federal do Brasil, CPI da Pandemia, 'Reunião nº 9999, 2021', meeting held on 25 May 2021, dedicated to the hearing of Mayra Pinheiro, physician and Secretary of Work Management and Health Education, https://legis.senado.leg.br/atividade/comissoes/comissao/2441/reuniao/9999 accessed 8 January 2025

emphasised the urgency of immediate treatment over waiting for systematic evidence, they were co-producing new frameworks for evaluating medical interventions in crisis situations. This was evident in Francisco Alves' testimony comparing 'Early Treatment' to using an uncertified parachute in an emergency – equating scientific rigour to futile bureaucracy.

5.4.2.2 Boundary Work

Boundary work, a concept developed by Thomas Gieryn[325] and further elaborated by Sheila Jasanoff,[326] examines how lines between science and non-science are drawn and contested. This concept analyses how actors establish, maintain, or challenge the boundaries that define legitimate scientific knowledge and expertise. In regulatory science and policy contexts, boundary work reveals how different groups negotiate what counts as valid scientific authority, and how it is constructed and contested.

Boundary work revealed how the network redrew lines around what constituted valid scientific evidence. For example, again when Zimerman presented his modified evidence pyramid to the CPI or when Francisco Alves declared 'It is us, physicians, who speak, not the science communicator'[327] they engaged in boundary work by defining who had legitimate authority to evaluate scientific claims. This boundary work operated to elevate clinical experience above other forms of knowledge.

5.4.2.3 Public Reason

Public reason, as conceptualised by Jasanoff,[328] explains how scientific claims establish legitimacy for public actions in modern societies. It represents the frameworks through which scientific knowledge becomes accepted as a basis for collective decision-

[325] Gieryn (n 297)

[326] Jasanoff (n 117)

[327] Analysed in Chapter 7, he was referring to the act of communicating to a mother the decease of her child.

[328] Jasanoff (n 117)

making and policy action. Public reason is particularly important because in contemporary governance, scientific reasoning has become a crucial criterion for evaluating the appropriateness of policies and public health measures.

The analysis employed public reason as a lens to understand how the anti-scientific network constructed legitimacy for 'Early Treatment' through scientific discourse. This concept was particularly valuable in examining three key aspects:

First, the analysis showed how network members built public reason through careful integration of scientific language, clinical authority, and moral imperatives. For instance, when Nise Yamaguchi testified 'Every life matters a lot... Why should we wait for people to progress to severe situations?',[329] she was constructing public reason by combining scientific authority with moral urgency to justify immediate action.

Second, the concept helped reveal how the network reframed the burden of proving effectiveness by subverting evidence about Early Treatment, making the adoption sound reasonable as a last resort, even if there was no indication it would help in responding to the pandemic. This was evident when Francisco Alves used his 'parachute metaphor',[330] comparing 'Early Treatment' to using an uncertified parachute in an emergency. This rhetoric transformed scientific questions about efficacy into moral questions about saving lives, creating public reason for immediate action despite lack of scientific validation.

Third, public reason illuminated how the network established 'Early Treatment' as a reasonable competing paradigm to conventional public health measures. For

[329] Senado Federal do Brasil, CPI da Pandemia, 'Reunião nº 10018, 2021', meeting held on 1 June 2021, dedicated to the testimony of physician Nise Yamaguchi, https://legis.senado.leg.br/atividade/comissoes/comissao/2441/reuniao/10018 accessed 8 January 2025 (Translation by author).

[330] Senado (n 324)

example, as Mayra Pinheiro cited that '73 protocols include off-label medications'[331] she was conflating the exceptional use as the norm in medical practice to justify the widespread use of chloroquine.

5.4.2.4 Data Sources and Case Selection

The primary empirical material consists of testimonies given to Brazil's Parliamentary Inquiry Commission on Covid-19 (CPI da Covid) between May and October 2021. Ten key testimonies were selected for in-depth analysis based on their centrality to debates around Early Treatment. The statements that invoke medical expertise are coded under the 'medical' field, while references to clinical studies or scientific publications fall under the 'scientific' field. This categorisation allows for a detailed examination of how actors employ different fields of knowledge to assert authority and legitimacy.

Supporting Early Treatment:

- Dr. Nise Yamaguchi (Immunologist)
- Dr. Mayra Pinheiro (Secretary at Ministry of Health and physician)
- Dr. Ricardo Zimerman (Internal Medicine)
- Dr. Francisco Alves (Physician)
- Dr. Osmar Terra (Congressman and physician)

Opposing Early Treatment:

[331] Senado (n 325)

- Dr. Luana Araújo (Infectious Disease Specialist)
- Dr. Cláudio Maierovitch (Public Health Specialist and physician)
- Dr. Natália Pasternak (Microbiologist)
- Dr. Pedro Hallal (Epidemiologist)
- Dr. Jurema Werneck (Director of Amnesty International and physician)

These testimonies were supplemented by examination of network communications through social media and other channels that connected to the events and statements being analysed. All materials were analysed in their original Portuguese, with translations provided for quoted material.

5.4.3 Using Anti-Science to Avoid Accountability and Liability

This part of the analysis employs two complementary theoretical frameworks to analyse how Brazil's anti-scientific network systematically manipulated scientific expertise while avoiding accountability for promoting unproven Covid treatments. This political use of anti-scientific discourse is at the heart of Chapter 8. The combination of Jasanoff's three bodies of expertise,[332] and Hood's blame avoidance strategies[333] provides analytical tools to understand both the manipulation of scientific authority and the evasion of responsibility.

[332] Jasanoff (n 118); and Jasanoff (n 117)

[333] Christopher Hood, 'The Risk Game and the Blame Game' (2002) 37 Government and opposition 15; and Christopher Hood, 'Risk and Governance: The Architectonics of Blame-Avoidance', in Layla Skinns, Michael Scott, Tony Cox (eds.), *Risk* (Cambridge University Press, 2011)

5.4.3.1 The Three Bodies of Expertise

Sheila Jasanoff's concept of the 'three bodies of expertise' provides a framework for analysing how expert authority functions and can be manipulated in policy decisions.[334] This framework identifies three interconnected components through which expertise operates in society: the body of knowledge itself, individual experts, and institutions of advice-giving. Each body has specific vulnerabilities that can be exploited by actors seeking to influence policy outcomes while avoiding accountability.

The first body – scientific knowledge – comprises the established research findings, methodological standards, and evidence base that inform policy decisions. This includes clinical trials, epidemiological data, and research publications. The second body encompasses individual experts who interpret and apply scientific knowledge in policy contexts. These are the scientists, physicians, and technical authorities who translate knowledge into practical recommendations. The third body consists of the formal institutions and procedures through which scientific knowledge informs policy decisions. This includes advisory committees, regulatory bodies, and established protocols for evidence review.

This conceptual framework proves particularly valuable for analysing how anti-scientific networks operate. Rather than simply rejecting expertise outright, these networks often work to manipulate the relationships between these three bodies, creating alternative structures of authority while maintaining plausible deniability. The framework helps identify specific mechanisms through which this manipulation occurs and how it enables the promotion of policies that lack robust scientific support.

[334] Jasanoff (n 205)

5.4.3.2 Blame Avoidance as an Analytical Framework

Blame avoidance refers to the strategies and behaviours that public officials and organisations employ to minimise their responsibility for controversial decisions or negative outcomes. Drawing primarily from Hood's work[335] and complemented by Bovens' research,[336] this framework examines how actors create distance between decisions and accountability while maintaining influence over outcomes.

The analytical framework identifies three primary strategies through which blame avoidance operates. Analysis of presentational Strategies to understand how actors manage perceptions and narratives around their actions.[337] In the context of Brazil's pandemic response, presentational strategies manifested in how officials crafted ambiguous documents and communications. Agency Strategies focus on how responsibility is delegated or dispersed across multiple actors or institutions. The analysis reveals how officials systematically created organisational structures that obscured clear lines of accountability. Policy Strategies examines how policies themselves are designed to minimise blame risk. The research shows how Brazilian health policies were crafted to create accountability gaps while maintaining influence over outcomes.

5.4.3.3 Data and Case Selection for Analysing The political manipulation of expertise

Chapter 8 examines how political actors in Brazil's anti-scientific network manipulated scientific expertise and institutional procedures during the Pandemic to promote 'Early Treatment' while avoiding accountability. The analysis draws from three primary data sources that illuminate different aspects of this manipulation.

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335 Hood (n 334) a, b

336 Mark Bovens, 'The Concept of Public Accountability' in Ewan Ferlie et al (eds), The Oxford Handbook of Public Management (Oxford University Press 2005) ch 8; and Mark Bovens, 'Analysing and Assessing Accountability: A Conceptual Framework 1' (2007) 13 European Law Journal 447.

337 Hood (n 334)

The core dataset comprises testimony from the CPI da Covid. This includes detailed testimony from four Ministers of Health who served during the pandemic. The analysis also examines testimony from other key political figures including Mayra Pinheiro, who served as Secretary of Labour Management and Health Education, and Congressman Osmar Terra, who advised the president on pandemic response.

- Luiz Henrique Mandetta (Bolsonaro's first Health Minister and Physician)
- Nelson Teich (Bolsonaro's second Health Minister and Physician)
- Eduardo Pazuello (Bolsonaro's third Health Minister and Army General)
- Marcelo Queiroga (Bolsonaro's fourth Health Minister and Physician)
- Mayra Pinheiro (Secretary of Labour Management and Health Education at the Ministry of Health and physician)
- Osmar Terra (Congressman and physician)
- Elton Chaves (CONITEC representative)

The second major data source consists of official documents and institutional communications. This includes the Ministry of Health's Information Notes 9 and 17, which established national protocols for Early Treatment, technical opinions from the Federal Council of Medicine, and documentation from CONITEC. These materials demonstrate how institutional procedures were systematically manipulated to promote 'Early Treatment' while maintaining deniability about policy implications. The analysis pays particular attention to the strategic ambiguity in these documents' language and their positioning within institutional hierarchies.

The third dataset encompasses public communications and media coverage, including social media posts, press releases, and news reports. These sources help trace how political actors managed public perceptions of their decisions and created strategic separations between formal and informal communications. This includes examining deleted Ministry of Health social media posts and tracking how officials characterised their public statements differently in different contexts.

5.5 Conclusion and Introduction to Data Analysis Chapters

This chapter has outlined the methodological approach employed to examine the formation and operation of an anti-scientific network in Brazil during the Pandemic, with a focus on the promotion of Early Treatment.

Drawing on Castells' network theory and Jasanoff's concepts of co-production, boundary work, and public reason, this thesis explores how anti-scientific networks were structured, how scientific authority was constructed and contested, and how digital communication technologies influenced public and regulatory responses.

Analysing data sources including the CPI da Covid, news media, NGOs reports, official government communications, and validating with semi-structured interviews with with two key actors. This array of sources enables a comprehensive examination of how the anti-scientific discourse was constructed, disseminated, and contested in the public debate and in institutional spaces.

The analytical process involves several key steps: network mapping to identify key actors and their relationships; qualitative discourse analysis to uncover recurring themes, argumentative strategies, and rhetorical devices; and an examination of how scientific claims were mobilised and transformed in different contexts, as well as in-depth interviews.

While acknowledging limitations such as the focus on the Brazilian context and potential biases in data sources, this methodological framework provides a robust foundation for addressing the research questions. The researcher's positionality as a scholar in socio-legal studies has also been considered, emphasising a reflexive approach throughout the study.

The following four chapters present the findings of this methodological approach, each focusing on a different aspect of the anti-scientific network and its discourse:

Chapter 6 applies Castells' network theory to map the structure and dynamics of the anti-scientific network. It identifies key nodes, examines their roles and interactions, and analyses how the network's structure facilitated the spread of anti-scientific discourse. This chapter provides the foundational understanding of the network's composition and communication patterns.

Chapter 7 employs Jasanoff's concepts of co-production and boundary work, along with discourse analysis, to examine how scientific authority was constructed and contested within the network. It explores how actors navigated the boundaries between science, politics, and medicine, and how they framed 'Early Treatment' as a legitimate alternative to mainstream scientific recommendations.

Chapter 8 focuses on the institutional aspects of the anti-scientific discourse, analysing how it was integrated into government communications and policy decisions. This chapter draws on Jasanoff's concepts of public reason and regulatory science to examine how scientific claims were mobilised in policy contexts and how regulatory frameworks were challenged or reinterpreted.

Chapter 9 focuses on how digital communication technologies influenced the dynamics of public reason and regulatory science. This chapter explores how social media and other forms of mass self-communication, as conceptualized by Castells, were used to challenge traditional accountability mechanisms and bypass established gatekeepers of scientific information during the CPI da Covid.

Chapter 6

Empirical Findings: An Account of the Anti-Scientific Network Applying Castells' Framework

6.1 Introduction:

In this chapter, the empirical findings are presented with reference to the theoretical framework developed by Manuel Castells, focusing on his concepts of Network, Program, and forms of Communication Power. The analysed qualitative data show the anti-scientific network advocated for 'Early Treatment' in Brazil through actors sharing common objectives. This network included public authorities, private sector representatives, congresspeople, and medical-scientific authorities such as Prevent Senior, Osmar Terra, Nise Yamaguchi, and Health Minister Eduardo Pazuello. This network promoted a set of drugs they referred to as 'Early Treatment', which it touted as an effective and viable measure to combat the pandemic. The anti-scientific network's discourse advocated for widespread use of drugs before and/or at the early stages of Covid infection, thereby apparently replacing the need for any other measure that would prevent or reduce the severity of contagion, such as self-isolation, the usage of face masks, and even vaccination.

In Castells' terminology,[339] these actors cooperated to produce communication-based power, one of the main features of the theory of a networked society. The following sections will discuss how the network identified in this study exercised communication power, deeply rooted in the combination of digital technologies mobilised in public and private communications. Although SUS, as a public health system, is institutionally responsible for managing public health issues, the network managed to circumvent the public policy-making of the SUS, by presenting 'Early Treatment' as an effective, scientific, and economically viable solution to the Covid-19 crisis.

The discussions here presented address Sub-RQ1 and Sub-RQ2, focusing on a characterisation of the anti-scientific discourse as a form of communication power achieved through networked mobilisation (sRQ1) and justified through shared discourse (sRQ2).The analyses have been separated out in the following sections according to the three main concepts of Castells' work which are key to understanding these phenomena. To recap the research questions:

> **Sub-RQ 1**: How did the CPI da Covid reconstruct the anti-scientific network and discourse, including its main arguments?
>
> **Sub-RQ 2**: How was the adoption of 'Early Treatment' justified by members of the anti-scientific network as the best health measure available during the Covid-19 pandemic to the detriment of other scientifically grounded measures such as vaccination, self-isolation and social distancing?

[339] Castells (n 52)

In Chapter 6, I analyse how an anti-scientific network mobilized to promote 'Early Treatment' during Brazil's Covid-19 pandemic, applying Manuel Castells' theoretical framework of network society and communication power. The empirical findings reveal how various actors—including political authorities, medical professionals, private companies, and military institutions—formed a coordinated network that advocated for unproven drugs as a pandemic solution while undermining scientifically validated measures like vaccination and social distancing. Former President Jair Bolsonaro emerges as a central programmer of this network, using both institutional resources and digital communication strategies to legitimise and disseminate anti-scientific discourse. This chapter demonstrates how communication power operated to circumvent established public health institutions, particularly Brazil's Unified Health System (SUS), while creating the appearance of scientific legitimacy through strategic interactions between diverse social actors with converging interests. The findings illustrate Castells' concept that in contemporary networked societies, institutional power can be effectively challenged by networked communication that shapes public perception and behaviour.

In the first Section (6.2), the theoretical reference is to Castells' concept of 'Program', exploring the role that the political programme promoted by President Jair Bolsonaro played within the network. The defence of 'Early Treatment' was largely based on the discourses disseminated by the former president and are also aligned with the political programme he advocated.

In the second Section and third Sections (6.3 and 6.4), I present the anti-scientific network and the interactions between the nodes, describing them using the elements of the network in Castells' theory. I focus on its main nodes and the

interactions between them, identified in the Final Report of the CPI da Covid. Hence, this chapter identifies which types of actors and strategic relationships contributed to the promotion of 'Early Treatment' and its official (and extra-official) adoption.

In the fifth Section (6.5), I summarise how the established communication power and was used to communicate to the broader public the idea that 'Early Treatment' was a sound public health measure.

6.2 The Programme That The Anti-Science Network Was Advocating for Early Treatment

6.2.1 The Definition of Programme in Castells' Theory

Castells describes the contemporary social structure as based on communicative power and the establishment of networks. As such, it relies on the sharing of a common programme and a common discourse. In this context, the term 'programme' refers to a set of instructions or rules that guide the behaviour of a social system or a technological system. As elaborated in Chapter 2 on Castells' theory, Castells asserts that programmes can be integrated into social systems, such as political ideologies or economic policies, in much the same way as they can be incorporated into human-made systems, such as computer software. According to Castells, this programme, which is embedded in the network, allows the continued self-configuration of the network towards the established goals, which he describes as programming and reprogramming.

> A network is defined by the program that assigns the network its goals and its rules of performance. This program is made of codes that include valuation of performance and criteria for

> success or failure. In social and organizational networks, social actors, fostering their values and interests, and in interaction with other social actors, are at the origin of the creation and programming of networks.[340]

The support and adoption of 'Early Treatment' in Brazil were closely linked to the influence of the then-President Jair Bolsonaro. The Covid crisis hit Brazil during his government and, as I will present throughout this Chapter, Bolsonaro was frequently mentioned as an influential figure in news reports as well as by senators and witnesses during the CPI da Covid, not only due to his position but also his frequent public communications on what people should or should not do in relationship to the pandemic. These mentions underscored the prominent position that the political figure had assumed as one of the key actors promoting the use 'Early Treatment' as a policy and in public discussion.

The relevance Bolsonaro and the impact of his political agenda (programme) on the pandemic response can be explained by several factors. Obviously, he held the position of Chief of the Executive Power in a country with a presidential system of government, where he had control over the appointment of Federal Ministers, including the Minister of Health. However, his role in promoting 'Early Treatment' was not only associated to the competences of his mandate, and the limitations thereof, but also to the use of the visibility he acquired outside of office. Borba discusses how his capacity to influence people was also increased by Brazil's highly personalised political culture.[341] Borba explains how Brazilian politics can be extremely oriented towards the individual figure of a leader and detached from trust and recognition of democratic political

[340] Castells (n 52) 202

[341] Borba (n 45)

institutions, such as political parties. This strategy was relevant for Bolsonaro as he projected his image as strong ruler over that constraints of institutions.

Subsection 6.2.2 presents the programme of the anti-scientific network, analysing how former President Jair Bolsonaro, as a central node within the network, had relevant programming power – the power to influence the network's objectives. I will describe key actions of Jair Bolsonaro in favour of 'Early Treatment' to argue that he had an important role in establishing the anti-scientific agenda in the country. The following subsections will present the anti-scientific network and the interactions between its nodes contributing to the programme.

6.2.2 Bolsonaro's Rise as Outsider Using Unorthodox Communication Methods

Jair Bolsonaro stands out for mobilising significant popular support in Brazil. His electoral victory in 2018 has been explained by a combination of strategies that were heavily reliant on the use of social media to gather social support around a far-right populist discourse.[342] According to Cesarino, Jair Bolsonaro's electoral campaign in 2018 highlighted his political construction as a far-right digital populist, someone who became a charismatic leader in the contemporary era through 'fractal topology' and 'recursivity'.[343] This means that, unlike in previous forms of populism, the populist leader is capable of mediating his charisma and discourse through digital technologies, having his messages and figures reproduced intensely in smaller and more private online environments, still contributing to his image and political agenda in this (partially)

[342] Wendy Hunter and Timothy J Power, 'Bolsonaro and Brazil's Illiberal Backlash' (2019) 30 Journal of Democracy 68; and Leticia Cesarino, 'On Digital Populism in Brazil | PoLAR: Political and Legal Anthropology Review' https://polarjournal.org/2019/04/15/on-jair-bolsonaros-digital-populism/ accessed 17 December 2023.

[343] Leticia Cesarino, 'Como Vencer Uma Eleição Sem Sair de Casa: A Ascensão Do Populismo Digital No Brasil' (2020) 1 Internet & sociedade 91.

spontaneous chain of viral communication of the digital environment. The marking trait of his form of electoral politics, and later governance, was the capacity of articulating digital communities in his support.

With intense and coordinated support groups, his social media platforms have combined millions of followers and successfully contributed to the election of a candidate who, at the time, did not possess some of the traditional political resources that were deemed influential in Brazil. In fact, despite being a 'long-time officeholder', through his communication strategies he managed to get elected as an 'outsider' and was able to radically expand his almost inexistent party at the time.[344]

In his campaign and during his presidency, Bolsonaro adopted political stances associated with cultural conservatism, economic freedom, and anti-establishment sentiment. He strongly embraced an anti-establishment discourse, in direct conflict with the main institutions and practices of Brazilian politics. The 'Early Treatment' was promoted on the basis of this anti-institutional agenda, challenging the SUS, scientific bodies, such as CONITEC and ANVISA, and international organisations, such as the WHO, while also being influential on many of these institutional spaces.

6.2.3 'Early Treatment' as Bolsonaro's Programme for the Covid Pandemic

These political positions and communication practices were also evident in the President's actions during the pandemic. Although Jair Bolsonaro was a central node and programmer[345] of the anti-science network, he did not testify during the CPI and hence

[344] Hunter and Power (n 343)

[345] Castells (n 52): A node with heightened capacity of influencing the network.

the analysis of CPI documents does not refer to specific depositions by him. Instead, as a central figure, his interactions are analysed from the discourse of the nodes that orbited him and reproduced his discourse. This will be quite evident in the following section where other nodes of the network are brought into the scope of analysis. These nodes not only directly echo his discourse but are also interrogated, by the senators, about their connections with Jair Bolsonaro

The numerous excerpts from media and social media effectively establish the objectives he was promoting. It is interesting to note that the anti-scientific discourse he mobilised brought elements that chimed with multiple interest groups and gathered authority from medical, economic, political fields. His defence of 'Early Treatment' was supported by argument about 'medical' evidence, economic viability, capacity of the military laboratory to produce the 'Early Treatment' drugs, and even reference to religious values.

In general, the Federal Government in Brazil alleged to be focusing on measures aimed at supporting the national healthcare system. However, this support was geared towards activities that were not necessarily science-backed and most often in conflict with the more important scientific recommendations by the WHO and national authorities, including self-isolation, the use of face masks, and vaccination. For example, the Federal Government's expenditures was particularly focused in funding the production and delivery of 'Early Treatment' drugs.

Meanwhile, Bolsonaro instigated people not to follow state or municipal-level recommendations on isolation, mask use, and vaccination. The conflicting recommendations and lack of a national coordination of pandemic measures was one of the triggers that led the Senate to establish the CPI and investigate the Executive's action. For example, on a national statement in March 22, 2022, Bolsonaro said that 'The

governors are true job exterminators. This crisis is much worse than the one caused by the coronavirus in Brazil' (Author's translation).[346]

Jair Bolsonaro produced several statements downplaying the impact of the disease and recommended the possibility of using medications associated with Early Treatment.[347] He criticised the Brazilian media for creating a 'sense of panic' and undermining the government's strategy. In subsequent public addresses nationally broadcast in 2020, on March 6,[348] 24, and 31,[349] Bolsonaro emphasised the importance of preserving jobs and tackling the infection with a focus only on high-risk populations, especially the elderly. He also advocated for the continuation of a normal life for the remaining '90% of the population', suggesting that they would experience only mild symptoms if they contracted the disease.

> The virus has arrived, we are confronting it, and it will soon pass. Our lives must go on. Jobs must be preserved. The livelihoods of families must be safeguarded. We must indeed return to normality. A few state and municipal authorities

[346] Bianca Gomes, 'Bolsonaro: 'Governadores são verdadeiros exterminadores de empregos" *Estadão* (Brasil, 22 March 2020)https://www.estadao.com.br/politica/bolsonaro-governadores-sao-verdadeiros-exterminadores-de-empregos/ accessed 13 December 2023.

[347] Nick Paton Walsh, William Bonnett, Jo Shelley,Eduardo Duwe, 'Bolsonaro Calls Coronavirus a 'little Flu.' Inside Brazil's Hospitals, Doctors Know the Horrifying Reality' (*CNN*, 23 May 2020) https://www.cnn.com/2020/05/23/americas/brazil-coronavirus-hospitals-intl/index.html accessed 27 October 2023; Jen Kirby, 'Jair Bolsonaro Undermined Brazil's Coronavirus Response. Now There's a Political Crisis.' (*Vox*, 28 April 2020) https://www.vox.com/2020/4/28/21228512/brazil-bolsonaro-coronavirus-moro accessed 27 October 2023; and Rodrigo Pedroso, 'Brazil's Bolsonaro Says He Will Not Be Vaccinated against Covid-19' (*CNN*, 13 October 2021) https://www.cnn.com/2021/10/13/americas/bolsonaro-no-vaccine-intl/index.html accessed 27 October 2023.

[348] Governo do Brasil, 'Pronunciamento Do Senhor Presidente Da República, Jair Bolsonaro, Em Cadeia de Rádio e Televisão, 6 de Março de 2020 — Biblioteca' https://www.biblioteca.presidencia.gov.br/presidencia/ex-presidentes/bolsonaro/pronunciamentos-oficiais/pronunciamento-do-senhor-presidente-da-republica-jair-bolsonaro-em-cadeia-de-radio-e-televisao-6-de-marco-de-2020 accessed 13 December 2023.

[349] Governo do Brasil, 'Pronunciamento Do Senhor Presidente Da República, Jair Bolsonaro, Em Cadeia de Rádio e Televisão, 31 de Março de 2020 — Biblioteca' https://www.biblioteca.presidencia.gov.br/presidencia/ex-presidentes/bolsonaro/pronunciamentos-oficiais/pronunciamento-do-senhor-presidente-da-republica-jair-bolsonaro-em-cadeia-de-radio-e-televisao-31-de-marco-de-2020 accessed 13 December 2023.

> should abandon the concept of ['scorched earth'], the prohibition of transportation, the closure of businesses, and mass confinement. (...) In my particular case, due to my history as an athlete, if I were to be infected with the virus, I wouldn't need to worry. I would either feel nothing or, at most, be affected by a little flu or a minor cold, as that well-known doctor on that well-known television channel put it[350] (Author's translation).[351]

In addition to his statements, Bolsonaro disregarded several measures imposed by different public authorities, whether by his own Ministry of Health or by state governments. This included deliberately not wearing masks in public spaces and promoting gatherings. Throughout the two years of the highest peaks of Covid deaths in Brazil, he received groups of supporters at the Palácio do Planalto (the presidential house) and organised political rallies with motorcycle rides, known as 'motociatas'.[352]

A journalistic investigation published in June 2021 by media outlet O Globo, based on the analysis of photos posted on the Palácio do Planalto website, noted that Bolsonaro had participated in at least 84 gatherings since the beginning of the pandemic,

[350] This refers to a statement by Brazilian physician Drauzio Varella, misquoting his January 30, 2020, remark that no 'change of habits' was needed. As the situation evolved, Varella issued new recommendations on March 22, 2020, condemning the political misuse of his earlier words (author's translation).

[351] Governo do Brasil, 'Pronunciamento Do Senhor Presidente Da República, Jair Bolsonaro, Em Cadeia de Rádio e Televisão, 24 de Março de 2020 — Biblioteca' https://www.biblioteca.presidencia.gov.br/presidencia/ex-presidentes/bolsonaro/pronunciamentos-oficiais/pronunciamento-do-senhor-presidente-da-republica-jair-bolsonaro-em-cadeia-de-radio-e-televisao-24-de-marco-de2020 accessed 13 December 2023.

[352] Al Jazeera N.a., 'Brazilian President Leads Motorcade of Thousands of Supporters' *Al Jazeera* (May 23 2021) https://www.aljazeera.com/news/2021/5/23/brazilian-president-leads-motorcade-of-thousands-of-supporters accessed 7 December 2023.

and in only 3 of them was he wearing a mask.[353] In the pictures below, I have compiled some of those gatherings with other press archives of his actions in 2020 and 2021.

Analysing Facebook, Recuero et al.[354] found repeated evidence of the predominance of disinformation content, especially about Early Treatment, on pages and groups aligned with the then-president. Similar findings were also obtained from content circulating via WhatsApp[355] and in the analysis of content directly disseminated by the president's official channels,[356] with a cascading effect for the spread of similar messages in the mainstream media.[357]

[353] Alfredo Mergulhão and Rodrigo Castro, 'Bolsonaro Participou de Pelo Menos 84 Aglomerações Desde o Início Da Pandemia de Covid-19' *Jornal O Globo* (Brazil, June 5 2021) https://oglobo.globo.com/politica/bolsonaro-participou-de-pelo-menos-84-aglomeracoes-desde-inicio-da-pandemia-de-covid-19-25048811 accessed 14 December 2023.

[354] Raquel Recuero et al., 'Bolsonaro and the Far Right: How Disinformation about Covid-19 Circulates on Facebook in Brazil' (2022) 16 International Journal of Communication 24.

[355] Felipe Soares et al., 'Como a Desinformação Sobre Covid-19 No WhatsApp Foi Utilizada Para Amenizar Crises Do Governo Federal' (2021) 2 Ciência da Informação Express 1 https://cienciadainformacaoexpress.ufla.br/index.php/revista/article/view/74 accessed 14 December 2023.

[356] Recuero and Soares (n 179)

[357] Soares and Recuero (n 88)







Image 6: Examples of Bolsonaro disregarding sanitary measures by attending and promoting gatherings without a mask, encouraging others to do the same. From left to right:

On 23 May 2021, Bolsonaro and his former Health Minister participated in a motociata event, two days after Pazuello's testimony at the Covid Senate Inquiry.[358]

In February 2021, Bolsonaro was photographed during a visit to Sena Madureira, Acre.[359]

Congresswoman Carla Zambelli removed her mask at a public gathering, following Bolsonaro's lead after he had taken his off to confront a journalist.[360]

While contradicting public health recommendations, Bolsonaro insistently advocated for the widespread use of chloroquine and other 'Early Treatment' drugs. He

[358] Ana Luiza Albuquerque, 'Ao lado de Pazuello, Bolsonaro gera aglomeração no Rio após dizer que teve sintomas de Covid', *Folha de S.Paulo* (Brazil, 23 May 2021) https://www1.folha.uol.com.br/poder/2021/05/bolsonaro-passeia-de-moto-e-gera-aglomeracao-no-rio-apos-dizer-que-teve-sintomas-de-covid-19.shtml accessed 14 December 2023.

[359] Mergulhão and Castro (n 354)

[360] Ana Mendonça, 'Carla Zambelli Imita Bolsonaro e Tira Máscara Durante Entrevista Do Presidente' *Estado de Minas* (Brazil, 21 June 2021) https://www.em.com.br/app/noticia/politica/2021/06/21/interna_politica,1278897/carla-zambelli-imita-bolsonaro-e-tira-mascara-durante-entrevista-do-preside.shtml accessed 14 December 2023.

explicitly named the medication as a hopeful solution and a way to combat Covid and often would outright state that it had miraculous effects against the disease.

As he set this agenda, he would often interact with other social actors who composed the anti-scientific network, described in Section 6.2. The variety of nodes belonged to different interest groups, such as companies and military organisations, but cooperated towards the same goal. Below I will mention a few of these interactions which drew the anti-scientific network together, and these interactions are indicative of network-making and programming powers in the network society theory.

As Bolsonaro strived to include 'Early Treatment' as part of the policy measures taken by the Brazilian government and pressured states and municipalities to adhere, he also served as catalysed and programmer that produced a convergence of interests around the promotion of Early Treatment. In one of his broadcasts addressed to the nation, he announced an increase in the production of chloroquine through the Brazilian Army's Chemical-Pharmaceutical Laboratory, even when its scientific efficacy had not been confirmed. The Army, a node foreign to the SUS, was being mobilised towards a public health measure not approved by the public health system.

> The virus is a reality, and there is still no vaccine or scientifically proven effective medication against it, although hydroxychloroquine appears to be quite effective. (...) The Military Chemical-Pharmaceutical Laboratories have gone full force, and in 12 days, one million tablets of Chloroquine will be produced, along with hand sanitizer (Author's translation).[361]

[361] Governo do Brasil (n 350)

In a third address to the nation in 2020 on April 8th, Bolsonaro also quoted a physician who claimed to have successfully treated all his patients with the medication. He recurrently acknowledged and referred to physicians and other authorities who supported his agenda in any way. In this statement, he once again emphasised the challenges of confronting the disease without resorting to 'job-related fatalities'.

> After consulting with doctors, researchers, and Heads of State from other countries, over the past 40 days I have been advocating for the possibility of treating the disease from its early stages. Just recently, I spoke with Dr. Roberto Kalil. I commended him for his honesty and commitment to the Hippocratic Oath, as he openly admitted to not only to using Hydroxychloroquine but also administering it to dozens of patients. All of them are now safe. He also told me that, despite not having completed the testing protocol, he chose to administer the medication now to avoid regrets in the future. This decision could go down in history as having saved thousands of lives in Brazil. Congratulations to Dr. Kalil (Author's translation).[362]

While the televised addresses were being broadcast nationally on radio and television, the weekly live streams on Facebook and their dissemination on the president's and his supporters' social media platforms provided even more direct endorsements of the medication. Emphasising the combination of mixed references to scientific validation and the 'suggested' or '*practically* demonstrated' effectiveness of the measures mentioned above, Bolsonaro frequently expressed hope in the use of

[362] Governo do Brasil 'Pronunciamento Do Senhor Presidente Da República, Jair Bolsonaro, Em Cadeia de Rádio e Televisão, 8 de Abril de 2020 — Biblioteca' https://www.biblioteca.presidencia.gov.br/presidencia/ex-presidentes/bolsonaro/pronunciamentos-oficiais/pronunciamento-do-senhor-presidente-da-republica-jair-bolsonaro-em-cadeia-de-radio-e-televisao-08-de-abril-de-2020 accessed 14 December 2023.

chloroquine. Multiple analyses conducted during that period highlighted his high frequency of content creation[363] and the uncontested leadership in the digital reach of the content advocating for chloroquine posted by Jair Bolsonaro on his official social media platforms.[364]

According to a journalistic mapping by the Brazilian organisation Repórter Brasil, Bolsonaro made 18 public displays of the 'Early Treatment' 'drug packages' in 2020 between March 26 and October 29, when considering his messages disseminated through social media and official events.[365] Other journalistic mappings also monitored the president's official speeches in defence of chloroquine, even in 2021 (Guerra, 2021). The various statements made by the president have also been analysed in academic articles that explore the various aspects of this phenomenon.[366]

[363] Raquel Lopes, 'Bolsonaro fez um post por semana em defesa do 'tratamento precoce' desde o início da pandemia' *Folha de S.Paulo*, (Brazil, 23 May 2021) https://www1.folha.uol.com.br/poder/2021/05/bolsonaro-fez-um-post-por-semana-em-defesa-do-tratamento-precoce-desde-o-inicio-da-pandemia.shtml accessed 27 October 2023.

[364] Ruediger et al., '(Pseudo)Science and the Public Sphere | Democracia Digital – DAPP' https://democraciadigital.dapp.fgv.br/en/studies/pseudoscience-and-the-public-sphere/ accessed 14 December 2023.

[365] Diego Junqueira e Joyce Cardoso, 'Charlatanismo e propaganda irregular: as violações de Bolsonaro ao exibir 18 vezes marca de cloroquina para Covid' (*Repórter Brasil*, 4 de agosto de 2021) https://reporterbrasil.org.br/2021/08/charlatanismo-e-propaganda-irregular-as-violacoes-de-bolsonaro-ao-exibir-18-vezes-marca-de-cloroquina-para-covid/ acessado em 11 de março de 2025.

[366] For an analysis of Bolsonaro's discourse on (hydroxy)chloroquine in his weekly live streams, see: Ana Carolina Pontalti Monari, Allan Santos & Igor Sacramento, 'COVID-19 and (Hydroxy) Chloroquine: A Dispute over Scientific Truth during Bolsonaro's Weekly Facebook Live Streams' (2020) 19 *Journal of Science Communication* A03. For a global perspective on chloroquine advocacy, see: Susan Gould and Susan L Norris, 'Contested Effects and Chaotic Policies: The 2020 Story of (Hydroxy) Chloroquine for Treating COVID-19' (2021) *Cochrane Database of Systematic Reviews* https://archive.lstmed.ac.uk/17388/ accessed 15 December 2023.



Image 7: Two instances of Bolsonaro displaying hydroxychloroquine packages during his official weekly live streams. Source: YouTube[367] and Facebook[368]

The left image is a screen capture from a live stream still available on YouTube. The original content was deleted from Facebook but was reportedly streamed on his official page on 26 March 2020.

In this context, for example, during the live stream on the 26th, he praised the pharmaceutical company Apsen, which was also owned by a political supporter, for donating stocks of tablets to Brazil. In the occasion, he emphatically expressed his faith that God would have empowered researchers and scientists to believe in the medication, stating, 'if God wills, this one will soon be confirmed as the remedy to cure all those with the coronavirus or Covid-19',[369] not only subverting science but also signalling proximity to his religious base. He also mentioned that the Brazilian Health Regulatory Agency (ANVISA) had just approved the research protocol for the Albert Einstein Hospital and said: 'We have heard from various places in Brazil of people being treated with this, and it has been working really well, it's not miraculous or anything'.[370] On the

[367] Bolsonaro TV, *Live Do Presidente Jair Bolsonaro - 26/03/2020* (YouTube, 2020) https://www.youtube.com/watch?v=u-8vAoZewtg accessed 15 December 2023.

[368] Jair M Bolsonaro, '- Live de quinta-feira com o Presidente (09/04/2020) | Facebook Live' https://www.facebook.com/watch/live/?ref=watch_permalink&v=510043273217516 accessed 15 December 2023.

[369] Author's translation, Bolsonaro TV (n 39).

[370] Ibid

9th of April 2020, he reiterated the praise for Dr. Roberto Kalil, as he did in the public statement the day before, emphasising that: 'A renowned doctor like Dr. Kalil took that medication himself and, respecting the Hippocratic Oath, stated that he took hydroxychloroquine'.[371] He also raised the possibility that patients could switch doctors if they wanted to use the medication:

> If you're of a certain age and get infected, would you take it or not? My mother is 93 years old. It's obvious she's going to take it. Democratically, no problem at all. Of course, she's going to consult a doctor. But I'm sure the doctor will be in favour. You go to the doctor, he recommends something that you know won't work... You have every right to change doctors. You have every right (Author's translation).[372]

These statements strongly point to Bolsonaro's use of communication power to prompt other nodes to adhere to the anti-scientific agenda, while bypassing existing institutions for scientific revision and approval such as CONITEC.[373] Meanwhile, international organisations, such as the WHO, were advising against the use of the drug. These strategies of reposting, commending and even appearing in live-streams were a very effective way of fostering public support for Early Treatment.

While Bolsonaro ambiguously recognised the lack of proof for the effectiveness of the drugs, which can only be achieved through institutional scientific evaluation, he urged people to use them. Through his discourse, he created social pressuring physicians directly and through their misguided patients. In this strategy, Bolsonaro did not take

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[371] Bolsonaro (n 40).

[372] Ibid

[373] Body within the SUS responsible for approving the adoption of new treatments, will be discussed in the next chapters.

down the norms (institutions) that evaluate and support scientific activity, but he created mechanisms of circumvention and incites social pressure to ignore and even resist institutions.

This use of communication power is interesting because, in a situation where he could not outrightly overpower the institution, he fostered a pervasive form of disobedience that corroded its authority – which is in line with the analyses of how new forms of authoritarianism operate.[374] Similarly, Bolsonaro is particularly effective in prompting others to engage and contribute to the program, as we will see in the next Section 6.3.

In this regard, the 'Early Treatment' programme is achieved from multiple angles, appealing to a variety of network and social values. For example, later, in July 2020, Bolsonaro affirmed that he was feeling better from Covid after contracting the virus. He described his gradual improvement day by day as a result of the medication, while he recorded himself taking the pills. He stated: 'We know that none of them have their scientific effectiveness proven. But... [I am] one more person for whom it's working. So, I trust hydroxychloroquine. Do you?' (Author's translation).[375] He continuously explored his populist rhetoric to create a sense of unity and pit people against each other, associating the drug to a political ideology of individual solutions and the exercise of 'freedom' against collective problems.

The last statement denotes the strategic ambiguity around science, explored better in Chapters 7 and 8, for he did not entirely reject the notion of some level of scientific validity. Bolsonaro often invoked the fact that there were ongoing studies or

[374] Steven Levitsky and Daniel Ziblatt, *How Democracies Die* (Crown 2019).

[375] Guilherme Venaglia, 'Bolsonaro Publica Vídeo Tomando Hidroxicloroquina e Se Diz Melhor Da Covid-19' *CNN Brasil* (07 July 2020) https://www.cnnbrasil.com.br/saude/bolsonaro-divulga-video-tomando-hidroxicloroquina-e-se-diz-melhor-da-covid-19/ accessed 15 December 2023.

cherrypicked preliminary or low quality studies, such as from Didier Raoult, to argue for the effectiveness of chloroquine. In this regard, his discourse was pseudo-scientific, since it would not rely on science as a whole, but chose the aspects referred to as 'science' that would support his agenda. This façade of scientific backing legitimised him to misuse parts of the institutional apparatus to reproduce the discourse of the anti-scientific network, such as the Military, the Secretary of Communication of the Presidency (SeCom), and the Ministry of Health.

Justifying the emphasis on 'Early Treatment' as a possible and necessary hope to prevent the Covid response from causing worse outcomes, such as unemployment, was a shared feature of the discourse among 'Early Treatment' supporters during the meetings of the CPI da Covid.

Bolsonaro's political actions set the stage for the establishment of the anti-scientific network aimed and conferred legitimacy for nodes to support the effectiveness for a medical treatment that had not yet been scientifically validated. This programme offered possibilities for the collaboration and involvement of diverse actors, not limited to individuals, but organisations other networks. Castells[376] discusses how much of the power of the networks stem from this capacity of emerging when shared programmes are set, joining multiple and diverse nodes in collaboration.

It is important to note that, although Jair Bolsonaro has relevant political power and played an important role in setting the program, this does not automatically imply that he had full control of the network. As we will see, each node contributed to the anti-scientific discourse from their own convergent interests, catalysed (and not coerced)

[376] Castells (n 52)

by Bolsonaro, which is very relevant in understanding the nature of communicative power. I will discuss the formation of the anti-scientific network in the next Section.

6.3.The Formation of an Anti-Scientific Programme Disconnected from the SUS

The statements and events discussed in the preceding section not only highlight the existence of a well-defined programme advocating for 'Early Treatment' but also underscore the diversity of actors and interests that were enlisted in its support. These events illustrate how these nodes were effectively aligned in their interactions when it came to the discursive promotion of Early Treatment. This perspective shows the embodiment of 'values and objectives' in the network.[377] In Bolsonaro's own public statements, this alignment becomes particularly evident.

According to Castells,[378] networks are composed of nodes, i.e. individuals, organisations, or entities, connected by various types of links, such as technological, economic, social, or cultural, and whose existence and function are defined by their roles as components of the network. Networks facilitate the flow of information, resources, and influence across various nodes, enabling the exertion of power and influence over society as a whole. Apart from being formed by organisations and individuals, networks also comprise the technological infrastructure that enables communication and connectivity.

The anti-scientific network for supporting 'Early Treatment' in Brazil brought together a set of physicians, public authorities, and private entities with an ability to

[377] Castells (n 52) 20

[378] Castells (n 52)

'connect with a limited number of steps to the entire network and related networks from any node in the network',[379] as presented below.

6.3.1 The Congregation of Members of the 'Shadow Cabinet' as the Embodiment Of an Anti-Scientific Network

The anti-scientific network mobilisation is best exemplified by formal, extraofficial meetings, held by a number of actors to think of solutions for Covid but with no connection with the public health system – which would be the competent and legitimate authority to conduct a public health crisis response. These meetings were held by the president and some other public officials, such as Congressman Osmar Terra, and also included private individuals and organisations, such as Dr. Nise Yamaguchi, and insurance company Prevent Senior. However, the meetings intentionally excluded important elements of the public health system, such as the Health Minister at the time, Luiz Henrique Mandetta, who was a physician and was opposed to the deployment of 'Early Treatment' drugs.

Many of these extraofficial interactions remained somewhat concealed from broad public scrutiny, but the CPI uncovered many of these interactions after a tips from the public to the investigation. The opposition sought to show that there was an intentional articulation between these actors. When analysed in conjunction, these articulations form a network that can be analysed under Castells' lens. In order to view these events in the political context at the time and substantiate the networks' actions, I have aggregated and analysed many news articles which help give this perspective.

[379] Duncan J Watts and Steven H Strogats, 'Collective Dynamics of 'Small-World' Networks' (1998) 393 Nature 440.

For instance, an analysis conducted by the Metrópoles newspaper based on the presidential diary pointed to at least 27 occasions where formal meetings between Jair Bolsonaro and the members of this parallel advisory group were officially recorded.[380] It is important to note, that in one of the recordings of these meetings that were revealed during the CPI investigations, Congressman Osmar Terra explicitly uses the term 'shadow cabinet' or 'parallel cabinet', when he describes the nature of these meetings, which is why the term was later adopted by the CPI. These statements alone are a strong indications of the intentional articulation to circumvent the traditional public health policy making institutions, and networked nature of this mobilisation. Within this scope, the CPI brought forward as its first witness former Health Minister Mandetta, who narrated, in his opinion, how he suspected that the President was following recommendations from an unknown source, since he contradicted all of the Ministry's technical recommendations.[381]

In July 2021, there was also a 'rediscovery' of a broadcast from September 2020, motivated by the CPI investigation. On the occasion, Jair Bolsonaro's official social media accounts released videos of a meeting chaired by him and attended by many doctors including the aforementioned Nise Yamaguchi, Paolo Zanotto, and Osmar Terra. In the CPI Final Report, this reunion is mentioned as being officially described, in the presidential diary, as a meeting with the Association Physicians for Life.

The key excerpts of the meeting were presented in the investigation to show how this body of experts questioned the reliability of Covid vaccines, raising potential risks associated with the use of 'any vaccine' or vaccines developed so quickly. On that

[380] Mayara da Paz, Flavia Said, 'Bolsonaro se reuniu ao menos 27 vezes com 'ministério paralelo' | *Metrópoles*' (Brazil, 5 June 2021) https://www.metropoles.com/brasil/politica-brasil/bolsonaro-se-reuniu-ao-menos-27-vezes-com-ministerio-paralelo accessed 27 October 2023.

[381] Senado Federal, Relatório Final da CPI da Pandemia (2021) https://legis.senado.leg.br/sdleg-getter/documento/download/fc73ab53-3220-4779-850c-f53408ecd592 accessed 27 October 2023.

occasion, Bolsonaro also suggested that the Federal Council of Medicine (CFM) should take legal action against those who were pressuring doctors not to prescribe chloroquine, which again shows a programmatic strategy of having nodes pressuring people to adhere to the anti-scientific discourse.

Finally, the most important part of the meeting, which was heavily incorporated into the CPI's report, also discussed Paolo Zanotto's proposal for creating a 'shadow cabinet'. Zanotto mentions:

> **Paolo Zanotto:** Mr. President, you have a troop of lions here. And lions need to be guided by a lion as well. And one of the things I want to say is this: in the context of the vaccine, we have to be extremely careful (...) So in that sense, my suggestion. I even sent a message to the Executive, I sent a letter to Weintraub, to Arthur[382], maybe it would be important to set up, we could help the Executive set up a shadow board, as if it were a 'shadow cabinet', they don't need to be exposed, so to speak, to popularity, to the press (Author's translation, Zanotto, 2020[383]).

[382] Arthur Weintraub, brother of former Education Minister Abraham Weintraub, held various positions in Bolsonaro's government and was known for his connections with business leaders.

[383] Paz et al. (n 381)



Image 8: The video frame shows Osmar Terra and Jair Bolsonaro addressing a room of doctors during the 'Shadow Cabinet' meeting. Nise Yamaguchi, wearing a white dress, is visible on the right. Source: Paz et al. (n 39)

Associated with the investigation of the Shadow Cabinet, the CPI identified a number of interactions that took place through the production of public content online. For example, the investigations retrieved live streams between Arthur Weintraub, at the time a presidential adviser and brother of the Minister of Education, and the physician Luciano Dias Azevedo. In the live streams from July 2020 and February 2021, both spoke positively about a supposed network of 300 supporters of hydroxychloroquine. Here are a couple of examples:

> **Arthur Weintraub**: [To Luciano Azevedo] You assembled a huge group, man. People don't know. You must have about 300 people in your network, networking, all about hydroxychloroquine, talking about the subject. Capillarity. You're tuned in, you know what's happening out there (Author's translation).[384]

[384] Fabio Zanini, 'Ex-assessor de Bolsonaro e médico detalham em lives 'gabinete paralelo' na gestão da pandemia' *Folha de S.Paulo* (Brazil, 3 June 2021) https://www1.folha.uol.com.br/poder/2021/06/ex-assessor-de-bolsonaro-e-medico-detalham-em-lives-gabinete-paralelo-na-gestao-da-pandemia.shtml accessed 27 October 2023.

Next, in Section 6.3.2, I will analyse a few of the more significant interactions between nodes in the network in support of the 'Early Treatment' drugs, leading up to the Section 6.4, where I describe the full network as reconstructed by the CPI around the identified program.

6.3.2 Details of the Interactions of Nodes within the Anti-Science Network, Highlighting the Role of 'Experts', Public Agencies, as Extracted from Media and Public Findings

As mentioned before, Jair Bolsonaro ambiguously referred to scientific authorities, cherry-picking and distorting their statements according to political convenience. For example, he would commend physician Dr. Roberto Kalil for his public support for chloroquine, and would attend rallies besides the Minister of Health, inciting people not to wear a mask. These social cues were highly effective for reinforcing other nodes' anti-scientific discourse and generating a public perception of effectiveness of the drugs.



Image 9: A sequence of images from *O Globo* shows Bolsonaro removing a child's face mask during a rally he organised. Despite claiming to follow scientific guidance, he repeatedly promoted actions contrary to public health recommendations.[385]

[385]Evelin Azevedo, 'Após Bolsonaro Tirar Máscara de Criança, Revista Science Publica Estudo Que Comprova Eficácia Do EPI Contra a Covid', *Jornal O Globo* (Brazil, June 26 2021)

As the defence of chloroquine unfolded within the context of the presidential discourse, medical doctors like Nise Yamaguchi, Paolo Zanotto, and Roberto Kalil gave interviews to Brazilian media, used their own social media platforms, to establish direct contact with government officials and collaborate the network. The anti-scientific programme offered an important platform for these individuals to project themselves in the public eye and even increased access to important political and economic actors. In exchange, their scientific authority lent the anti-scientific network an appearance of legitimacy.

In the case of oncologist Nise Yamaguchi, for instance, her credibility stemmed from a combination of her professional qualification as a medical doctor and PhD from the University of São Paulo (USP), which generate interest in her messages in the media and among 'Early Treatment' proponents. According to reports at the time, Yamaguchi even met with the then-president and was invited to join the Coronavirus Crisis Response Cabinet, later she was even considered as a replacement for the then-Minister of Health, Nelson Teich. The images below illustrate how her 'expert opinion' was mobilised by authorities such as federal congressman Eduardo Bolsonaro, son of Jair Bolsonaro, even when chloroquine had already been internationally dismissed as an effective means of combating Covid infection.

https://oglobo.globo.com/saude/apos-bolsonaro-tirar-mascara-de-crianca-revista-science-publica-estudo-que-comprova-eficacia-do-epi-contra-covid-25078339 accessed 27 October 2023.



Image 10: Examples of interactions within the anti-scientific network, from left to right:

In April 2020, Bolsonaro retweets a CNN interview with Nise Yamaguchi, promoting hydroxychloroquine for Covid-19 treatment. The headline highlights her invitation to the crisis cabinet.[386]

In the second image, Eduardo Bolsonaro announces a live stream featuring Yamaguchi, praising her medical expertise and advocacy for Early Treatment.'[387]

On 26 June, journalist Alexandre Garcia endorses Early Treatment, citing cases in Porto Feliz and Belém as cost-effective solutions to the epidemic[388]

Meanwhile, certain politicians and public agencies were also contributing to the anti-scientific network. These communications made the 'Early Treatment' policy seem

[386] Jair M. Bolsonaro [@jairbolsonaro], '- Imumologista/oncologista Nise Yamaguchi e o uso da Hidroxicloroquina no tratamento do COVID-19. https://t.co/8QwQX7Z0H7' https://twitter.com/jairbolsonaro/status/1247635800101212160 accessed 14 September 2023.

[387] UOL Notícias [@UOLNoticias], 'AO VIVO: especialistas Roberto Kalil Filho, Nise Yamaguchi, Estevão Portela Nunes, Pedro Batista Jr e João Fernando Ferreira discutem a eficácia da cloroquina para tratar a covid-19 e os processos para testar a efetividade de um medicamento #UOLDebate' https://twitter.com/UOLNoticias/status/1250817613506232322 accessed 14 September 2023.

[388] Eduardo BolsonaroBR [@BolsonaroSP], 'Hoje tem O Brasil Precisa Saber com a Drª Nise Yamaguchi @nise_dra . Com décadas de medicina e milhares de vidas salvas, ela deu uma verdadeira palestra sobre pandemia, tratamento precoce, cloroquina e muito mais. Inscreva-se e assista 18h em: https://youtu.be/bhAvfvFC-HQ https://t.co/vOJlsKoWVT' https://twitter.com/BolsonaroSP/status/1337742168392409088 accessed 14 September 2023

official, despite not meeting all requirements to be deployed as a public policy. In the screen captures below, we see official posts of political authorities and public institutions at the time:



Image 11: Examples of officeholders and public offices promoting anti-scientific discourse, from left to right:

On 29 August 2020, Brazil's Ministry of Health tweeted that 'Early Treatment' increases recovery chances, urging those with symptoms to seek medical attention.[389]

The Secretary of Communication of the Presidency amplified pro-Early Treatment remarks by Dr Luciano Dias Azevedo at an official event with Bolsonaro, urging immediate medical consultation.[390]

Mayra Pinheiro**,** head of Labour Management and Health Education at the Ministry of Health, praised the Brazilian Medical Association for defending doctors' autonomy to prescribe hydroxychloroquine.[391]

In August 2020, Congressman Osmar Terra announced his Covid-19 diagnosis, stating he had begun 'Early Treatment' with hydroxychloroquine and ivermectin while isolating at home.[392]

However, the interactions observed were not limited to mere citations or shared reposts among different members of the anti-science network. The images also depict instances of active participation in institutional spaces and bodies, such as the 'Crisis Task Force' for combating Covid, created by the President in 2020 but unrelated to the Shadow Cabinet and with limited power. This shows that, even though the anti-scientific network bypasses and sometimes pressures the public health system, it does not do so with an absolute severance from the public institutional structure. Part of the communication power it achieves is derived from its capillarity and influence on individuals who are also running the state bureaucracy. As previously discussed in

[389] Ministério da Saúde 💙 [@minsaude], 'O Brasil tem mais de 3 milhões de recuperados da #Covid19. O @minsaude reforça que ao sentir qualquer sintoma da doença, procure um serviço de saúde. O tratamento precoce aumenta as chances de recuperação. Então lembre-se: sentiu algum sintoma? #NãoEspere, procure um médico. https://t.co/grgzL8WHbl' https://twitter.com/minsaude/status/1299850828862365697 accessed 27 October 2023

[390]SecomVc [@secomvc], ' ⚠️ , 'mvc], ', 'mvc], 'omas, procure um médico. NÃO FIQUE EM CASA!' ⚠️ mDr Luciano Dias Azevedo, integrante de grupo com mais de 10 mil médicos favoráveis ao tratamento precoce, com medicamentos específicos, em evento com o Presidente Jair Bolsonaro. https://t.co/Ht7oXQIKsl' https://twitter.com/secomvc/status/1298057112048873472 accessed 14 September 2023

[391] Dra. Mayra Pinheiro [@dramayraoficial], 'Em tempos difíceis aqueles que tem coragem, autonomia e discernimento para deixar claro sua posição são reconhecidos como verdadeiros líderes. Parabéns a diretoria da AMB.' https://twitter.com/dramayraoficial/status/1285269217504301056 accessed 27 October 2023.

[392] Osmar Terra [@OsmarTerra], 'Comunico aos que me seguem que testei positivo para COVID-19.Estou bem e sem sintomas.Já Iniciei tratamento precoce com hidroxicloroquina e ivermectina. Comecei o isolamento em casa e cumprirei minha agenda de forma remota nos próximos dias seguindo as instruções médicas.' https://twitter.com/OsmarTerra/status/1327316597296537608 accessed 15 December 2023.

Cesarino's notion of 'fractal topology',[393] this capillarity, or the pervasiveness of this discourse with its capacity to enrol individuals even in less public spaces of communication, is an important factor of its effectiveness, where any individual can adhere and reproduce the Programme in their microcosm, fostering levels of network power that are undetectable or even not controllable by the institutional structures.

Building upon these accounts of the anti-scientific network's formation and interactions, the following section provides a comprehensive visualisation and analysis of the complete network as reconstructed by the CPI's Final Report, revealing the full scope of interconnections between actors across different sectors who collaborated to promote 'Early Treatment' in Brazil.

6.4 The Anti-Scientific Network Advocating for 'Early Treatment' According to the CPI Final Report

Throughout the analysis of the CPI Final Report, it was possible to identify references to 57 social actors. These are here analysed as nodes having some role or position supporting Early Treatment. They can be grouped into five categories that illustrate the diversity, complementarity, and sometimes hybrid nature of the professional sectors they come from. It is important to note that the Final Report of the CPI provides a comprehensive summary of the parliamentary investigation into Covid-19 but does not include every witness or detail. Some individuals who testified or were mentioned may be omitted, and not all supporters of 'Early Treatment' are accounted

[393] Cesarino (n 344)

for, that is why the network will not match perfectly the number of indicted individuals or deponents.

Here, I identify as 'hybrid', those nodes who are part of the anti-scientific network but also of the institutional apparatus, such as the Ministry of Health or the SUS. Hybrid nodes are particularly interesting because they have contradictory roles, often even using their institutional powers to advance the interests of the network.

The visual representation below depicts all nodes with at least one relationship identified, which accounts for a total of 46 nodes. For the rest of this research, I will disregard the sparse references to international actors, such as Donald Trump and Gregory Rigano, to focus on the anti-scientific network operating in Brazil and in opposition to the Brazilian institutions. The image below depicts a directed network graph formed by the relationships (edges) mentioned in the Final Report between the 57 nodes (social actors).



Figure 3: Network of primary nodes within the 'Early Treatment' support network, constructed based on the names and interactions outlined in the CPI Final Report. Nodes are social actors (individuals or organisations), while the edges connecting them are interactions identified in the Final Report, as illustrated by the direction of the arrows.

The nodes are colour-coded according to the proposed categorisation of nodes into five groups, which are based on their professional or industrial activities and

contribution within the network. Given that many nodes may belong to multiple groups, the primary criterion for categorising a node into a specific group is its more pronounced involvement in one area compared to others.

Additionally, the font size of each node reflects its degree of centrality within the network, as measured by its established connections. The degree is determined by the number of connections a node possesses, which includes both Out-Degrees (outgoing interactions) and In-Degrees (connections received by the node). Centrality here is used as a measure of connectedness with other nodes. Higher centrality means a greater number of connections and is correlated with a greater power to influence the network, however this power maybe asymmetrical, it is never unidirectional nor does the most central node have absolute control over the network.[394] In other words, both nodes are affected by their interactions, represented by the edges. Finally, the edges are coloured accordingly to the category of which the source nodes originates from. In the image, for example, President Jair Bolsonaro is mentioned ten times as someone connected within the network. So, if the CPI da Covid Final Report mentions that Nise Yamaguchi came to see him, this counts as a connection received by him (in-degree). It is depicted as a directed arrows, with a green colour, representing an interaction from a medical-scientific authority to a public official.

The five groups listed and described below indicate the main types of nodes from the anti-science network and the professional fields they occupied. The percentages assigned are useful to understand the composition of the network as reconstructed by the CPI and may give perspective on the network graph above - it is not intended, however, to be representative of the entirety of the wider anti-scientific network.

[394] Castells (n 52)

- Medical-scientific authority (In **green**): Physicians and/or scientists mentioned by the report in the context of 'Early Treatment' support. It includes the association Physicians for Life, Carlos Wizard, and Nise Yamaguchi which are the fourth, fifth, and sixth main actors of the entire network.

- Private sector (In **orange**): Actors related to the private sector, such as pharmaceutical companies. Pedro Benedito, the director of the private health insurance provider, and Prevent Senior, are the main actors of this group and respectively constitute seventh and eighth place of the entire network.

- Public officials (In **blue**): Members of executive, legislative, and state bureaucracy, mentioned by the report, such as Ministers, the President, public employees, and parliamentary representatives. It has two of the main nodes of the entire network, President Jair Bolsonaro, with Degree 16 is the main node of the entire network, and Eduardo Pazuello, with Degree 13, is the third main actor of the network.

- Federal government civil institutions (In **light blue**): Federal/executive branch institutions mentioned in the report, such as the Ministries. The Ministry of Health is the main actor of this group and the 2nd actor of the network, with a Degree of 14. Note that this category is distinguished from the above to identify individuals and public bodies because of the scope of their activities directly related to public health policy and provision.

- Federal government military institutions (In **purple**): Actors or institutions mentioned by the CPI's report as associated with the Army or related instances, including Scientific Laboratories and Army Officials. Its three social actors, together, sum a degree of 5. This category has been separated from the two above as the military in Brazil has a strong sense of corporation and unity, and separate behaviour from the civil administration.[395] For example, their discourse is marked by notions of hierarchy and public defence.

Having established the broader structure of the anti-scientific network promoting Early Treatment, the following section examines the key nodes in greater detail, analysing how their diverse professional backgrounds and institutional positions contributed to creating a multifaceted discourse that appeared credible across different domains of authority.

6.4.1 Analysing Key Nodes and How the Different Interactions Contributed to the Anti-Science Discourse

The anti-scientific network draws influence not solely from the authority within a specific professional field but recruits support from various domains in which their nodes participate in. In this way, the network materialises the convergence of efforts from nodes from the medical-scientific sphere, where they hold scientific credibility, as well as the political, economic, and military arenas. This coordinated mobilisation offers anti-scientific support from different authorities, constructing its 'appearance of reasonableness' and making it appear more cohesive and reasonable to the peripheral

[395] Celso Castro, *O Espírito Militar: Um Antropólogo Na* Caserna (São Paulo, Editora Schwarcz-Companhia das Letras 2021).

nodes of the network. These aspects of public reason[396] will be explored in Chapters 7 and 8 using discourse analysis.

Alongside these sources of authority, actors harness diverse media capabilities to impact public opinion and exert influence on the public, generating communication power in favour of Early Treatment. These connections can be further examined by delving into each of the nodes with prominent roles, as designated by the CPI da Covid final report, and through a closer analysis of their testimonies.

As explained in Section 6.2, the programme embraced by the anti-science network promoting 'Early Treatment' is directly linked to the political power and objectives centred around Jair Bolsonaro, and many of the network's interactions revolve around his figure.

Jair Bolsonaro is the first mentioned as a prominent advocate of 'Early Treatment' in the public sphere, following similar statements made by Donald Trump in the United States. For instance, Bolsonaro initiated contact with the Indian government, at the request of the private laboratory Apsen, to negotiate the release of raw materials for the production of 'Early Treatment' drugs. The CPI da Covid report also highlights Bolsonaro's social media posts in which he claimed to have asked the Ministry of Defence to ramp up hydroxychloroquine production. While these are some general events, the majority of relationships emphasised in the report involve interactions initiated towards Bolsonaro, such as visits by Osmar Terra and doctors from the Médicos Pela Vida (Physicians for Life) group during the aforementioned meetings or direct contacts with Prevent Senior managers.

[396] Jasanoff (n 117)

Prevent Senior and its Executive-Director Pedro Benedetto are nodes with a high degree of interaction within the aforementioned network. This is because they are not only identified by the CPI da Covid report as institutions and individuals in contact with various doctors within the network but also with public authorities. The private healthcare player in Brazil adopted a protocol based on 'Early Treatment' in its facilities and its representatives claimed in a live broadcast to have 'very interesting relationships' with the Federal Government. In addition to Prevent Senior, the Final Report also mentions questionable interactions between public and private institutions. The document found that Vitamedic, a pharmaceutical company that produces hydroxychloroquine and is associated with another private group that also produces the medication, financed advertisements for Physicians for Life, for example.

Luís Henrique Mandetta and Nelson Teich were the first two Health Ministers appointed by Bolsonaro to deal with the pandemic. Both, to varying degrees, were evaluated as being at odds with some of Bolsonaro's desires for managing the Pandemic, particularly when it came to expanding the use of hydroxychloroquine and Early Treatment. For this reason, they are not part of the network supporting Early Treatment. It is the third Health Minister appointed by Bolsonaro, Eduardo Pazuello, who integrates this network.

Pazuello, who had no prior experience in the health sector, was Nelson Teich's successor at the Ministry of Health. While serving as interim minister, Pazuello published the Information Note No. 17, listing chloroquine and other medications for early Covid infection, making them part of the medical protocol available in the SUS. This was one of the main documents produced by the Ministry of Health to support the wide-scale adoption of Early Treatment, and which companies such as Prevent Senior would use to justify sending ineffective drugs to their patients. Colonel Elcio Franco served as

executive secretary during Pazuello's mandate, handling vaccine manufacturer negotiations and facing scrutiny for his handling of these negotiations.

Pazuello participated in various live broadcasts and activities with Jair Bolsonaro and strengthened the role of Mayra Pinheiro in the Ministry of Health. After senators read statements from individuals like Carlos Wizard, Pazuello also admitted to receiving members of the anti-scientific network in his office, including Carlos Wizard, as well as doctors like Anthony Wong, and Paolo Zanotto, although he expressed disagreements regarding the advisory model suggested by them.

During Pazuello's administration, Secretary Mayra Pinheiro gained prominence, particularly in the realm of Early Treatment. As head of the Department of Labour Management and Health Education within the Ministry of Health, the paediatrician was actively involved in the ministry's actions during the Manaus health crisis, recommending 'Early Treatment' to the Municipal Health Secretariat and overseeing the launch of the TrateCov app.[397] She emerged as the medical spokesperson during General Pazuello's term and became publicly known as 'Captain Chloroquine,' actively engaging on social media platforms.[398]

The Ministry of Health and other institutions, such as SeCom, also prominently feature in the interactions established within the proposed network. In the case of the Ministry of Health, there are various basic working relationships that link actors like Pazuello and Mayra Pinheiro to it, making it the institution that stands out the most in this regard. Furthermore, other emphasised relationships involve how the Ministry of

[397] Pinheiro and Garcia (n 36)

[398] Mariana Schreiber, 'CPI da Covid: como depoimentos e documentos desmontam versão de Pazuello sobre crise no Amazonas' (*BBC News Brasil*, 19 de maio de 2021) https://www.bbc.com/portuguese/brasil-57166854 acessado em 12 de março de 2025.

Health subcontracted doctors supportive of 'Early Treatment' to produce scientific evidence in favour of the treatment.

Interactions involving the oncologist and immunologist, Nise Yamaguchi, succinctly illustrate the type of relationships discussed earlier, regarding medical authorities acting individually or collectively, as in the case of 'Physicians for Life'. The relationships emphasised in the CPI da Covid report signal her proximity to Jair Bolsonaro, her participation in formal meetings with institutional support from the government, and her involvement in a meeting with an alleged proposal to amend the hydroxychloroquine leaflet to include treatment for Covid in its therapeutical effects. During this occasion, she interacted with Luciano Dias Azevedo, a doctor from whom she allegedly received the new leaflet, and Antônio Barra Torres, the president of ANVISA, who was reportedly irritated by the 'absurd' proposal.[399]

Notably, the testimonies given during the CPI hearings also reveal numerous elements of interaction and connection among the participants in this network, who sometimes deny the existence of these links until they are confronted with statements and documentary evidence. They also downplay the official nature or relevance of these relationships, suggesting that they were sporadic and limited, rather than part of a coordinated effort with converging political interests.

To name a few cases, Nise Yamaguchi positioned herself as a scientific authority occasionally consulted by the Federal Government due to her expertise. She also mentioned other instances in which she claimed to have been consulted by governments with different political orientations, reinforcing her ongoing commitment to science and the country. Meanwhile, Eduardo Pazuello also downplayed the contacts he had with Carlos Wizard, Osmar Terra, or Jair Bolsonaro, indicating that none of them had

[399] Senado (n 54)

influenced his role as an administrator. However, all of these actors were meeting regularly in the Shadow Cabinet and were coordinating to promote Early Treatment, as demonstrated above and further detailed in the following sections.

The downplaying of these relationships as sporadic and informal is a strategy for escaping accountability and is contradictory to the scale and effectiveness of the discourse when we look at the network as a whole. The creation of 'accountability gaps' will be discussed in detail in Chapter 8. In the investigative context of the CPI, above all, the denial of network activity suggests an attempt to relegate the narrated actions to the realm of individuality, and sparse opinions and communications. This allowed for plausible denial of interests involved and rejecting the perception that something systematic was being advanced by the network. This is evident in the excerpts of their discussion below. When confronted with the interactions, Federal Congressman Osmar Terra and former Minister Pazuello simply frames them as occasional and unimportant/insignificant.

> **Mr. RENAN CALHEIROS** - Your Excellency. Are you still developing any work or strategies together with Paolo Zanotto?
>
> […]
>
> **Mr. OSMAR TERRA** - No, I never spoke to Paolo again. I met him that day and we never spoke again, right? I don't have any... Once I think he participated... There was a live [stream] before that, there was a live [stream] in which he participated and in which I participated too. There were ten people on the live [stream]. And that was it, that's the relationship. There isn't, there isn't anything secret, agreed, a committee, something, that doesn't exist, Senator. It might even have. The President could

> even have created it, he didn't, it doesn't exist. They are sporadic opinions and conversations that he can accept or not, it's up to him.
>
> […]
>
> **CALHEIROS** - ... or did you speak with Carlos Wizard again, just with him?
>
> **PAZUELLO** - I talked to Carlos Wizard throughout... I talk to him throughout my life. [He b]ecame a friend. Once every 15 days or [once] a month, when he calls me, I chat, but always in a completely informal way, nothing like a health adviser (Author's translation).[400]

Finally, the resulting effect of these fluid exchanges is communication power, which was able to mobilise all of these nodes towards a common goal, political programme, and, ultimately, a significant portion of society.

6.5 The Communication Power Established Through The Network's Anti-Scientific Discourse

In Castells' theory, communication power has always been a core aspect of achieving the capacity to influence human minds and advance a set of established goals. With the advance of the internet networks have become a more relevant form of social organisation and with increased capacity to exert power, whereas, power is the relational

[400] Ibid

capacity that enables a social actor to influence asymmetrically the decisions of other social actor(s) in ways that favour the empowered actor's will, interests, and values.[401]

This power is exercised through processes of creating meaning and representation through the control of symbols, information flows, and the framing of discourse, which, in turn, influence the behaviour of individuals and groups and shape perceptions in a socially widespread way. In practice, the effects of the network's communication power can be observed in the widespread social adhesion to the use of 'Early Treatment' and reproduction of the discourse.[402] Interestingly, the data provided above fits precisely a particular form of power described by Castells, *network-making power*, as an aspect of communication power

> In a world of networks, the ability to exercise control over others depends on two basic mechanisms: (1) the ability to constitute network(s), and to program/reprogram the network(s) in terms of the goals assigned to the network; and (2) the ability to connect and ensure the cooperation of different networks by sharing common goals and combining resources, while fending off competition from other networks by setting up strategic cooperation[403]

The popularity and reach of Jair Bolsonaro's messages is notable by the prominence gained by the expression 'Early Treatment' – and all of the political values and goals it materialises. Both in the digital and non-digital environments, the term became a common expression.

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[401] Castells (n 52) 45

[402] Ibid

[403] Ibid

To foster his communication power, Bolsonaro was skilled in taking advantage of mass communication and this can be seen in how traditional media channels echoed his messages and reported on his activities as president. However, Bolsonaro was also very skilful in taking advantage of the internet, through his social media accounts, communicating directly with the public – using mass *self*-communication, as Castells defines.[404] His ability to establish his own means of communication can be exemplified by the fact that at one point, the traditional media outlets jointly refused to report on Bolsonaro's messages about the pandemic and his verbal abuse of journalists.[405] Nonetheless, through social media, he was highly effective in reaching the wider audience and setting the debate agenda.

The reach of his audience can be exemplified through a few analyses. For one, Piaia et al.[406] identify how groups and content associated with the defence of 'Early Treatment' form a cohesive network in Brazil that generated the highest number of interactions recorded in the Twitter debate about Covid-19 in the first four months of 2021. Another analysis is the pervasiveness of videos on YouTube forming a huge community around bogus medical practices and the use of hydroxychloroquine.[407] The reports also exhibited specific behaviour regarding the news portals they used, sharing links from hyper partisan and right-wing pseudo-journalistic media extensively, thereby surpassing the longevity of links shared by other groups.

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[404] Ibid.

[405] Bolsonaro would address a crowd waiting for him every time he made his way to the Presidential House. Initially, there would be journalists there and he would take questions as well, but he would often lie and verbally abuse journalists. The main outlets decided to stop reporting on his messages or address his communications indirectly, to give him less visibility when he was promoting Covid-19 disinformation. ABRAJI, 'Veículos de imprensa suspendem cobertura presidencial na porta do Alvorada' (2020). https://www.abraji.org.br/noticias/veiculos-de-imprensa-suspendem-cobertura-presidencial-na-porta-do-alvorada accessed 18 December 2023.

[406] Victor Piaia et al., 'Science For All? Relating Actors, Links, and Discourses with (Fake) Scientific Claims About COVID-19 on Twitter' (2023) 48 Canadian Journal of Communication 581.

[407] Machado et al. (n 204).

> The data confirm, yet, the predominance of profiles and groups aligned with the federal government, in presence and engagement. This segment recurs to arguments allegedly scientific in order to validate and defend treatments and medications repeatedly refuted by the scientific community. The expressive presence of channels of the hyper partisan media — frequently pointed out as responsible for the circulation of deceitful information — reinforces the emphasis in the political dispute around the topic. Furthermore, the links originated in scientific magazines, when mobilised, barely follow the nexus that reigns the scientific field, or are originated in pseudoscientific websites, being constantly proven false by the press and established scientific institutes (Author's translation).[408]

This capacity for internal cohesion and intense promotion of a political agenda reverberated throughout the entire pandemic in Brazil, dominating narratives and perspectives regarding the meaning of the disease and the possibilities for its management. These discourses echoed both at the national and local scale, while also using international references and global digital content, attesting for the pervasiveness of this form of power. In line with Castells' insights on communication power in contemporary society, the sales of chloroquine, ivermectin, and all other drugs associated with the 'Early Treatment' kit skyrocketed during the period.[409] In these terms:

> In the network society, discourses are generated, diffused, fought over, internalized, and ultimately embodied in human

[408] Piaia et al. (n 407)

[409] Bianca Muniz, 'Farmácias venderam mais de 52 milhões de comprimidos do 'kit covid' na pandemia' *Agência Pública* (Brazil, 21 April 2021) https://apublica.org/2021/04/farmacias-venderam-mais-de-52-milhoes-de-comprimidos-do-kit-covid-na-pandemia/ accessed 15 December 2023.

> action, in the socialized communication realm constructed around local-global networks of multimodal, digital communication, including the media and the Internet. Power in the network society is communication power.[410]

In the sessions of the CPI, complaints from opposition senators and 'Early Treatment' critics about the 'disservice' of revisiting a topic that was 'scientifically' considered outdated were frequent. Nevertheless, a significant portion of the investigation was focused on the subject, both regarding the questioning of its scientific validity and from the perspective of holding public authorities accountable for actions or omissions related to medications or the rejection of scientifically robust measures, such as social distancing and the pursuit of vaccines. Overall, the discursive prominence assumed by 'Early Treatment' marked the Brazilian political agenda for pandemic response, even when it was contested by other actors.

The exercise of communication power has indeed manifested through the screen time, followers, and relative political power for participants in the network, to the extent that many of them returned as candidates in 2022 general elections and established themselves as digital influencers[411] (which I will discuss in detail in Chapters 9 and 10). However, the network denied exercising this power, and the materials analysed indicate they use communication to subvert and circumvent institutional prerogatives. The passage below, from the testimony of federal deputy Osmar Terra, illustrates how the networked operation and the exercise of communication power are downplayed in the face of accountability by attributing them to individual and altruistic responsibility. Though he was highly influential in mobilising society is noteworthy, he presents himself

[410] Castells (n 52) 53

[411] Many individuals who testified now have hundreds of thousands of social media followers and have run for office, a phenomenon explored in Chapter 9.

as 'a non-manager'. This designation meant that he had no decision-making power solely because he was a member of the Legislative branch, and not from the Executive, and, consequently, had no responsibility. He also rejects any possible 'real influence' that may have been exerted based on communication power, suddenly reaffirming a supposed prevalence of institutional boundaries:

> **SENATOR. RANDOLFE RODRIGUES** - I believe that you confirm that you exerted influence, frequently engaged with the President of the Republic - I don't know if you still hold the same opinions - but at the time, you expressed these opinions that were present on your social media.
>
> […]
>
> **MR. OSMAR TERRA** - You probably have it on your social networks too. So what I can say is that I am a Congressman, a Senator, I am a Congressman like others. Have you seen the President's photos? Have you seen how many times Congressman Hélio is with him? Hélio visits the President much more than I do. I don't go to the Alvorada Palace,[412] I don't take part in, I don't participate in live broadcasts with the President. Look at how many people participate in live broadcasts with him. I have... Every now and then, I talk to him. What's the problem? If I were so influential, I would be in a different situation. I am giving my opinions based on what I believe, because I lived it, Senator. I lived it...

[412] The presidential residence.

> **RODRIGUES** - No, of course. But you see, let me tell you: I am not underestimating your opinion; on the contrary, I am overestimating it, and I am saying that this opinion had a direct influence on the President of the Republic. And you, we are all legislators, we have followers who argue in our favour and counter-argue on social media (Author's translation).[413]

Challenged with the task of making sense of how these actors used mass self-communication to mobilise society in favour of Early Treatment, the CPI dives into an endless yarn ball of social media communications, in a desperate attempt to trace some sort of linear liability. Lost in individual tweets, live streams, Facebook posts, and interviews given out in media outlets, the CPI attempted to paint a bigger picture of coordinated activity, while formally only having the power to indict individuals for specific actions with well-delineated consequences. The CPI, in its attempt to track accountability, was hampered by the diffuse power that these loosely connected individuals and their communications produced.

6.6 Conclusion

The findings discussed above support Castells' claims that, while institutions serve as a framework for the individual exercise of power, power stems primarily from the capacity to facilitate cooperation among individuals towards a given programme. In the context of the anti-scientific network supporting 'Early Treatment' in Brazil, various entities from the Executive branch and individuals with institutional roles came to be a part of a mobilisation that undermined and called into question their own original

[413] Senado (n 54)

functions. This collective and networked effort challenged the global scientific consensus surrounding Covid and included notable figures like the then-President Jair Bolsonaro, pressuring members of the Ministry of Health and the Federal Council of Medicine, for instance.

Acknowledging the power of networks to pressure institutions ultimately places the notion of representative democracy on very fragile grounds – aligned with Castells' ideas.

> Yet, there is another, less apparent, form of crisis. If we accept the idea that the critical form of power-making takes place through the shaping of the human mind, and that this process is largely dependent on communication, and ultimately on media politics, then the practice of democracy is called into question when there is a systemic disassociation between communication power and representative power. In other words, if the formal procedures of political representation are dependent on the informal allocation of communication power in the multimedia system, there is no equal opportunity for actors, values, and interests to operate the actual mechanisms of power allocation in the political system. It follows that the most important crisis of democracy under the conditions of media politics is the confinement of democracy to the institutional realm in a society in which meaning is produced in the sphere of media.[414]

Finally, it is worth noting that the CPI itself, ends up drawing its power from audience engagement as well, since it does not have the direct power of punishing

[414] Castells (n 52) 298

anyone. Its activities drew great attention from the press and society. As I will discuss in Chapter 9, in order to achieve any accountability, the CPI da Covid had to reach out to network power and channel the dissatisfaction of the public towards the Covid response.

In the next Chapter 7, I will dedicate detailed attention to the discourse of the relevant nodes identified in Section 6.3 above to understand how the construction of this appearance of scientific validity and political legitimacy operated at a discursive level.

Chapter 7

Manufacturing Scientific Legitimacy: How Brazil's Anti-Scientific Network Promoted 'Early Treatment' Drugs

7.1 Introduction

'Every life matters a lot,' declared Dr. Nise Yamaguchi to Brazil's Parliamentary Inquiry Commission on Covid, 'Why should we wait for people to progress to severe situations?'[415] By invoking both scientific authority and moral imperative as a substitute for scientific procedure, network members like Yamaguchi systematically reconstructed what counted as valid evidence, legitimate expertise, and appropriate pandemic response. This excerpt exemplified that is at the heart of the anti-scientific discourse analysed in this Chapter.

This Chapter 7 examines testimonies given to Brazil's Parliamentary Inquiry Commission (CPI da Covid). Building on Chapter 6's mapping of the anti-scientific network's structure, it addresses the crucial question of in Sub-RQ 2:

> How was the adoption of 'Early Treatment' justified by members of the anti-scientific network as the best health measure available during the Covid-19 pandemic to the

[415] Senado Federal (n 330)

> detriment of other scientifically grounded measures such as vaccination, self-isolation and social distancing?

This focus is understanding how the anti-scientific network constructed scientific legitimacy for 'Early Treatment' through discursive strategies deployed in expert testimonies to the CPI da Covid. The Chapter is based on discourse analysis of ten expert testimonies delivered to the Commission. I argue that these expert's success in constructing a parallel science relied on three interconnected strategies.

1. Manufacturing uncertainty around scientific evidence while promoting alternative frameworks for evaluating knowledge;

2. Constructing new forms of expert authority that privileged clinical experience over research expertise;

3. Reframing Covid as primarily a clinical issue rather than public health crisis.

The analysis draws from testimonies of ten individuals who appeared before the CPI in their capacity as scientific or medical experts. Five supported Early Treatment: physicians Mayra Pinheiro, Ricardo Zimerman, Francisco Alves, and Osmar Terra, along with Nise Yamaguchi. The other five opposed the use of these disproven 'Early Treatment' drugs as a measure to tackle the pandemic: Luana Araújo, Cláudio Maierovitch, Dr. Natalia Pasternak, Dr. Pedro Hallal and Jurema Werneck. Their testimonies provide rich qualitative empirical material for examining how scientific authority was constructed and contested through discourse. The chart below illustrates how these deponents fit into the CPI da Covid's timeline.

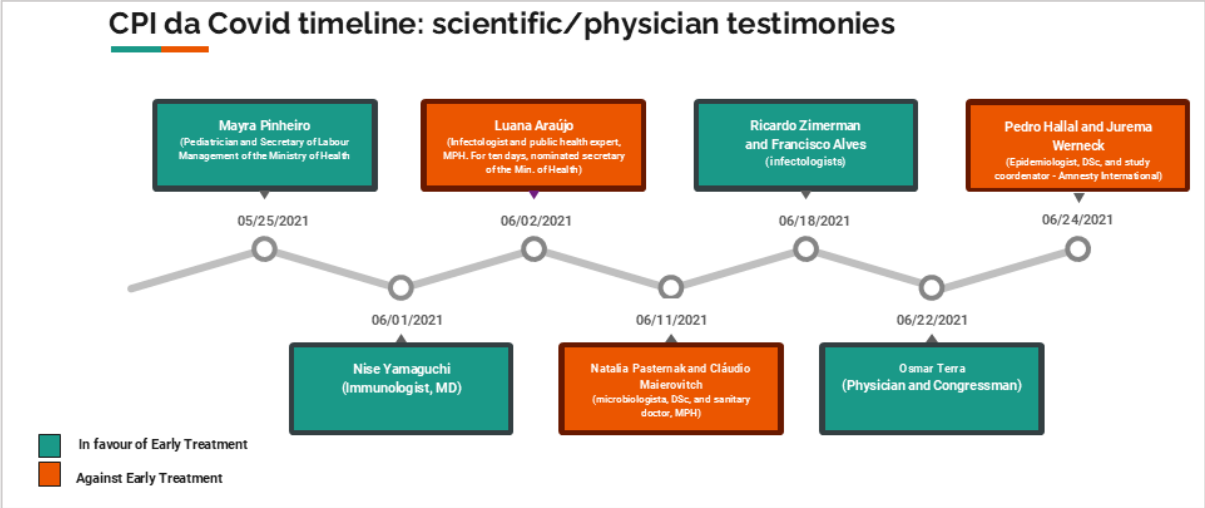


Figure 4: Dates and names of scientific experts and physicians testifying to the CPI da Covid.

The analysis is supplemented by examination of network communications through social media and other channels, such as Twitter and public announcements recorded in the media and the Brazilian Government's official channels. The communication here analysed were selected based on their connection to discussion around the scientific backing of 'Early Treatment' in the CPI da Covid, showing how scientific discourse was deployed to generate communication power. The focus is in understanding how the network systematically built authority while maintaining scientific appearance,. The arch of arguments of this Chapter is described below.

Section 7.2 spotlights the theoretical framework here employed for understanding how scientific authority is often constructed. Drawing on Jasanoff's concepts of co-production, boundary work, and public reason, and her application of Foucauldian discourse analysis, the section examines how the network manipulated scientific discourse to challenge institutional authority and create a façade of legitimacy. Integrating to Castells' overarching framework, this process of constructing scientific authority results in communication power, as it shapes public understanding and behaviour to compete with official public health measures.

Section 7.3 examines how the network manufactured scientific uncertainty around Covid treatment. Through careful manipulation of evidence standards and the promotion of alternative evaluation frameworks, network members created space for their claims while maintaining scientific credibility as part of their discourse and expertise-building. This analysis reveals how the network exploited scientific uncertainty in regulatory science, distorting the inherent ephemerality of scientific knowledge as a tool for advancing particular agendas, such as a clinical solution to Covid.

Section 7.4 analyses the network's construction of expert authority. By establishing clinical experience as paramount while systematically delegitimising other forms of expertise, network members created authority that could be mobilised for specific ends while maintaining scientific legitimacy. This Section demonstrates how boundary work operated to create new hierarchies of scientific authority that privileged network claims.

The analysis in Section 7.5 shows how these achievements in evidence manipulation and authority construction enabled a fundamental reframing of the Pandemic itself. By establishing the pandemic as primarily a clinical rather than public health challenge, the network created spaces where scientific authority could be jointly negotiated. Jasanoff's ideas on scientific authority as emerging from an interplay of knowledge, expertise, and societal trust which will be further unpacked and discussed throughout this chapter.[416] This framing through the discourses generated by the expert testimony to the CPI-da-Covid proved particularly powerful because it operated through established medical authority while fundamentally altering what counted as a legitimate pandemic response.

[416] Jasanoff (n 117)

Finally, Section 7.6 demonstrates how the anti-scientific discursive achievements generated public reason, which culminated in legitimating 'Early Treatment' as a reasonable competing paradigm. This analysis reveals how the network's construction of scientific and expert authority translated into 'communication power' – the ability to shape meaning through control of communication networks. The Section shows how scientific legitimacy enabled the network to influence public understanding and behaviour while resisting institutional control by CONITEC and ANVISA.

7.2 Theoretical Framework: Understanding the Construction of Scientific Authority

The analysis in this Section employs a theoretical framework that combines Jasanoff's concepts of co-production, boundary work, and public reason to understand how scientific authority generates a façade of legitimacy in the network society. This façade of legitimacy was essential for the anti-scientific network's success in promoting Early Treatment. Network power was achieved by enrolling people in the discourse relating to 'Early Treatment' through the construction of scientific authority, even when challenging established institutions, such as CONITEC, ANVISA or universities. Before discussing my analytical findings, I will specify key concepts discussed in Chapters 2 and 4, and explain how they are integrated in my methodology and the analytical framework of the thesis.

First, it is worth revisiting the concept of co-production, which analyses how scientific knowledge and social order are jointly constructed.[417] Rather than seeing science as an endeavour of purely objective truth-finding, co-production reveals how scientific claims are shaped by and help shape social worlds. In the case of 'Early

[417] Jasanoff (n 205)

Treatment' promotion, co-production helps explain how the network pushed for alternative methods of validation of facts and expertise that served its political purposes while maintaining the appearance of scientific legitimacy. This occurred through multiple channels: creating uncertainty around established evidence, promoting alternative evaluation frameworks for establishing 'Early Treatment' drugs as an adequate Covid response, establishing new expertise criteria, and building legitimacy through institutional positions of the Ministry of Health.

The co-production of scientific knowledge was essential for generating 'communication power' – the ability to influence people (i.e. change their behaviour) through control of communication networks and meaning-making.[418] The anti-scientific network was able to challenge institutional scientific authority while maintaining scientific credibility establishing a web where their own nodes supported their views on science. This process was particularly evident in how network nodes like Nise Yamaguchi and Mayra Pinheiro leveraged their medical credentials and institutional positions to lend 'Early Treatment' credibility. In doing so, they also challenged established scientific institutions and practices.

The analysis of this process will also rely on the concept of boundary work, developed by Gieryn[419] and further explored by Jasanoff in her work.[420] The deponents to the Commission disputed who could speak authoritatively about Covid treatments and what counted as valid scientific evidence, even if such dispute was between, for instance, professionals of Infectious Diseases and Epidemiology, on the one hand, or clinical observation and meta-analysis, on the other hand. The network engaged in strategies to create spaces where their alternative scientific claims could appear as

[418] Castells (n 52)

[419] Gieryn (n 297)

[420] Jasanoff (n 117)

legitimate science, while delegitimising what would be traditionally considered higher quality science. This was particularly evident in how the network elevated clinical experience over laboratory research and protected medical autonomy from institutional oversight. Through these demarcation strategies around scientific uncertainty and good science, which we can understand through the lens of boundary-work, the network sought to define domains of expertise that served its purposes and sought to monopolise scientific legitimacy.

Finally, the third element of Jasanoff's work that will be explored is the notion of public reason. It explains how scientific claims establish legitimacy for public actions.[421] In modern societies, scientific reasoning is an important criterion for evaluating the appropriateness of a policy for any given problem. In manipulating science, it is also possible to make certain policies appear as reasonable and legitimate. This chapter will scrutinise how the anti-scientific network built public reason using co-production and boundary-work, and connecting them to key elements discussed in Chapters 2 and 6 about Castells' theory. This construction of public reason through scientific discourse was essential for generating 'communication power'.[422]

Methodologically, this analysis is complemented by Foucauldian discourse analysis. According to Foucault,[423] discourse is understood not merely as language but as a system of representation that shapes how knowledge is produced and authority is established. In using Foucauldian concepts, Jasanoff's approach allows us to examine which and why different actors could legitimately speak in distinct ways about Covid

[421] Ibid

[422] Castells (n 52)

[423] Foucault (n 307)

treatment, and analyse the disputes over authority underlying the statements and dialogues.

In the testimonies to the CPI da Covid, actors from various positions – medical doctors, scientists, public officials – engaged in what Winiecki[424] describes as the construction and maintenance of expert authority through discourse. In the CPI testimonies, the discussions about the healthcare system and the incorporation of science informs us how the anti-scientific network operated the process of construction of scientific knowledge. Consequently, it allows us to understand how they influence to process of co-production process hinged on the negotiation and contestation of expertise.

The Foucauldian analysis of the transcripts of the CPI, complementing Jasanoff's concepts, revealed speakers' mobilised fields of reference[425] in their argumentation. This notably encompasses the invocation of underlying epistemic authority, rhetorical strategies, institutional frameworks, and the reiteration, acceptance, or contestation of ideas and arguments. The methodological approach scrutinises in a deeper level how the anti-scientific network operates its strategies in the boundary work process through discourse. For instance, when Mayra Pinheiro testified about Early Treatment, she simultaneously invoked her authority as a physician and government official while challenging WHO scientific consensus around hydroxychloroquine. This exemplifies what Foucault identifies as 'grid of specification', meaning the

[424] Don Winiecki, 'The Expert Witnesses and Courtroom Discourse: Applying Micro and Macro Forms of Discourse Analysis to Study Process and the 'doings of Doings' for Individuals and for Society' (2008) 19 Discourse & Society 765.

[425] Foucault (n 307)

> [S]ystems according to which the different [for example] 'kinds of madness' are divided, contrasted, related, regrouped, classified, derived from one another as objects of discourse.[426]

My analysis pays particular attention to what Jasanoff terms 'civic epistemologies' – the stylised, culturally specific ways in which publics expect the state's expertise, knowledge, and reasoning to be produced, tested, and put to use in decision-making and the culturally specific ways that public claims about science are evaluated and legitimised.[427]

The ensemble of these concepts helps understand how network members like Nise Yamaguchi constructed public reason through careful integration of scientific language, authority from their clinical experience, and appeal to moral imperatives. The discourse of members of the network demonstrates how certain ways of understanding and responding to Covid became possible while others were delegitimised. The following sections analyse the empirical material with reference to these theoretical concepts.

7.3 Manufacturing Scientific Uncertainty

The anti-scientific network's ability to promote 'Early Treatment' as a legitimate response to Covid relied heavily on creating uncertainty around scientific evidence that disproved or supported measures other than Early Treatment. Latent within their discourse, network members challenged established scientific standards and promoting

[426] Ibid 42

[427] Jasanoff (n 117)

alternative frameworks for evaluating evidence. This manufactured uncertainty created space for their claims while maintaining the appearance of scientific legitimacy.

As Jasanoff[428] observes, science in policy contexts often involves managing uncertainty rather than achieving absolute certainty. Policy questions involve incredibly complex issues, where a variety of scientific studies are relevant. Often, pointing towards fundamentally incompatible policy answers, which need to take into account non-scientific factors in devising their policies, such as economic and political matters. The anti-scientific network exploited this inherent characteristic of policy-making to create what appeared to be legitimate debate around Early Treatment's efficacy. Their strategy involved three key elements: 1) Contesting and Redefining Scientific Standards (7.3.1); 2) Promoting alternative frameworks for evaluation (7.3.2); and 3) Strategically exploiting scientific uncertainty (7.3.3). These elements are explored in the subsections below.

7.3.1 Contesting and Redefining Scientific Standards

The network's first key strategy involved challenging established hierarchies of scientific evidence while maintaining the appearance of scientific rigor. This was particularly evident in testimonies from medical professionals like Nise Yamaguchi and Ricardo Zimerman, who questioned the primacy of randomised controlled trials (RCTs) while promoting alternative forms of evidence, especially abundant and much less rigorous metanalyses around the use of ivermectin and hydroxychloroquine that appeared in a variety of online repositories.[429]

[428] Ibid

[429] For example, online repositories like *c19ivm.org* and *c19hcq.org* aggregate studies on ivermectin and hydroxychloroquine use without applying quality or reliability assessments. Metanalyses in favour of Ivermectin's effectiveness (*c19ivm.org*) and Hydroxycholoroquine's effectiveness (*c19hcq.org).* 'Ivermectin for COVID-19: real-time analysis of 276 studies' (c19ivm.org) https://c19ivm.org accessed 12 March 2025.,

Zimerman's testimony to the CPI is a great example of this approach which was repeated by several nodes (participants) of the network. In fact, Zimerman epitomized the anti-scientific network's view, as he designed and presented his version of how scientific evidence should be evaluated by policy-makers and citizens. During his deposition, he presented a different interpretation of the traditional evidence pyramid, arguing that observational studies and clinical experience deserved greater weight than typically accorded:

> **Evidence-based medicine isn't just about randomised, double-blind, placebo-controlled clinical trials**. In fact, these studies - I've drawn a parallel here - are akin to what would be the Constitution; they are extremely robust, but they have a problem: because these studies are difficult to conduct, in general, the number of patients enrolled is very low and they lack what we call statistical power to show a difference. That's why we have to combine them all to conduct meta-analyses, which also have a high degree of evidence**. For example, regarding ivermectin alone, we have at least five thematic reviews with meta-analyses. The most recent one, with 19 randomised clinical trials, nine of which were double-blinded, shows an 85% reduction in mortality with**

and 'HCQ for COVID-19: real-time analysis of 611 studies' (c19hcq.org) https://c19hcq.org accessed 12 March 2025

ivermectin in patients with mild to moderate Covid

(Emphasis added and Author's translation).[430]

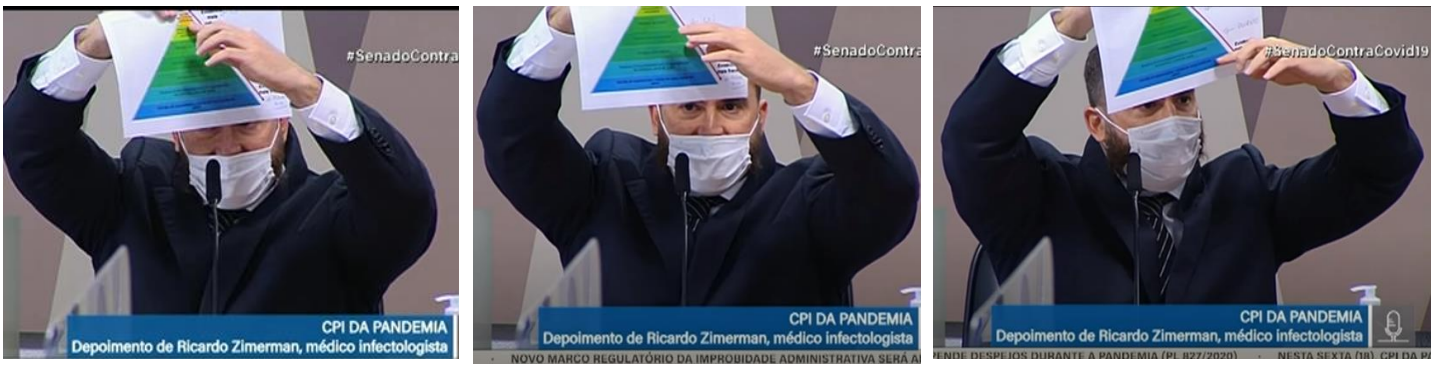


Image 12: At the start of his CPI testimony, Ricardo Zimerman presented a printed hierarchy of scientific evidence, ranking methodologies from highest to lowest: Systematic Reviews/Meta-analyses, Randomised Controlled Trials, Cohort Studies, Case-Control Studies, Cross-Sectional Studies, In Vitro and Animal Experiments, Case Series, and Expert Opinions. The same image had been previously displayed by a pro-Early Treatment senator during another deposition, as detailed on the next page.

This reframing served multiple purposes. First, it maintained the appearance of scientific rigour by referencing established concepts like 'evidence-based medicine,' which in the discussion during the CPI da Covid had no established definition. Second, it allowed Zimerman to do this while still acknowledging, albeit in a diluted manner, the differentiation between more and less robust scientific evidence – which he claimed was in his favour. Third, it enabled him to confidently state that chloroquine had allegedly already been validated through meta-analyses, placing this method in a higher tier of evidence while emphasising its even greater relevance in the lower tiers, which had become more valuable due to their faster ability to produce results.

By providing his own definition for evidence-based medicine and positioning himself as an authority in that matter, Zimerman also tried to establish the studies he

[430] Senado (n 324)

preferred as higher up in the evidence hierarchy. In doing so, this discussion created space for accepting lower-quality evidence by questioning the practicality of RCTs. Finally, it allowed the anti-scientific network to elevate the status of clinical observations, which network members frequently cited to support Early Treatment, while still maintaining, to some extent, the credentials of canonical science.

The strategy extended beyond individual testimonies, and was reflected in the discourse and measures the public officials took during the pandemic. Mayra Pinheiro, in her role as Secretary at the Ministry of Health, frequently emphasised the legitimacy of different evidence types. This is how she justified, in her testimony, such practices:

> Senator, first we need to define what effectiveness and evidence are, which most of the Brazilian population does not know, and I believe you, as non-physicians, are not obligated to know either**. In a situation of war, we use all available evidence to save people, provided that we are dealing with safe medications. And currently, we have no shortage of evidence.** At the onset of the disease, we had evidence of the action of drugs considered for off-label use in vitro, as well as individual experiences, the expertise of specialists, and the opinion of experts. Today we have this quantity (Emphasis added and Author's translation).[431]

This statement also explored the ambiguity around 'evidence' and 'effectiveness' to approximate the terms and conflate them, lowering the standard of proof which would be expected to legitimise policy action. In her statement, she also discredits 'lay' people and brings authority upon herself, which will be further commented on further in the next Section. By questioning established scientific standards while promoting a more

[431] Senado (n 325)

flexible framework, she explored uncertainty to accommodate 'Early Treatment' claims to be not only a viable Covid solution, but the most valuable in the setting of the pandemic crisis.

Network members employed what can be here called 'selective scientism'[432] – invoking rigorous scientific standards when convenient while dismissing them when challenging their claims. For instance, whenever challenged to comment on evidence that contradicted her claims, Nise Yamaguchi repeatedly cited her academic credentials and publication record while simultaneously arguing that traditional scientific evidence standards were too rigid for pandemic response:

> What I mean is that this eternal discussion among scientists will always happen. In every congress, the debate is this: **everyone putting forward their opinion.** What we cannot do is prevent doctors from expressing their opinion, based on what is already published. So, there is science. Science walks on both sides (Emphasis added and Author's translation).[433]

The pro-Early Treatment Senators repeatedly reinforced the credentials of the Pro-Early Treatment deponents to extend their authority to the evidence backing the drugs, and often diverted the discussion to matters of 'opinion' and 'freedom of opinion', conflating protocol with political freedoms. This selective approach to scientific standards was particularly effective because it maintained the appearance of scientific legitimacy while creating space for alternative claims. Traditional evidence hierarchies would have randomised controlled trials as the 'gold standard' and therefore

[432] Scientism here refers to the view that science, and especially natural science, holds the entirety and exclusivity of truth.

[433] Senado (n 330)

at the top of the evidence pyramid. However, while using the language of science, the network used 'Early Treatment' as a legitimate competing Covid solution for the public, informed by a different scientific paradigm that did not have the same objectivity requirements.

Critics of 'Early Treatment' explicitly identified this strategy during their testimonies. Luana Araújo was categorical to assess that the available evidence about the effectiveness of hydroxychloroquine did not provide enough theoretical grounds for its trial use in Brazilian patients. She also criticised the chart of hierarchy of evidence help by Senator Eduardo Girão (Image 13 below). Luana Araújo had criticised another deponent, Nise Yamaguchi, who previously asserted that meta-analyses were robust evidence to indicate the efficacy of chloroquine. Araújo responded by differentiating meta-analyses from systematic reviews, arguing that the Senator's version of the hierarchy presented was incorrect, as systematic reviews represent the highest tier of evidence and they are not equal to metanalyses.

Still reacting to Araújos remarks, Girão talked about the importance of evidence-based medicine. Interestingly, he presented the concept in similar terms as they would be later presented by Zimerman, who deposed later, and presented the same hierarchy (Image 12 above), wrongfully showing that metanalysis were at the top as more robust evidence.



Image 13: Pro-Early Treatment Senator Eduardo Girão presenting the hierarchy of evidence to validate a meta-analysis allegedly proving Early Treatment's efficacy while arguing that less robust

evidence remained valuable. He prefaced his questioning by citing the '14 thousand doctors who work in this field.'[434]

To this, Luana Araújo replied by intending to assert her knowledge and authority in the matter:

> I will take this opportunity because this **chart is wrong**, Senator. That point is there because **people, again, confuse meta-analysis with systematic review**. Meta-analysis is not a type of study; it is a statistical tool. So, just to put you in a slightly better position in terms of this chart, what is at the top is the systematic review, which is typically accompanied by the meta-analysis tool (Emphasis added and Author's translation).[435]

Similar critiques of the network's intentions were raised by other deponents against the use of Early Treatment. One such example was Dr. Natalia Pasternak, who framed her deposition by clarifying the distinctions between science and opinion, as well as between evidence and anecdotal evidence. She stated: 'Anecdotal evidence is not scientific evidence; it does not serve science; it's merely anecdotes, stories. And the plural of anecdotal evidence is not scientific evidence; it's just a bunch of anecdotal evidence'.[436]

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[434] Senado Federal do Brasil, CPI da Pandemia, 'Reunião nº 10022, 2021', meeting held on 2 June 2021, dedicated to the testimony of physician Luana Araújo, former secretary for combating Covid at the Ministry of Health, https://legis.senado.leg.br/atividade/comissoes/comissao/2441/reuniao/10022 accessed 8 January 2025.

[435] Ibid

[436] Senado Federal do Brasil, CPI da Pandemia, 'Reunião nº 10033, 2021', meeting held on 11 June 2021, dedicated to the testimony of invited experts Natalia Pasternak and Claudio Maierovich, https://legis.senado.leg.br/atividade/comissoes/comissao/2441/reuniao/10033 accessed 8 January 2025 (Translation by author).

However, the network's success in creating uncertainty around evidence standards made such critiques less effective, as the very basis for evaluating scientific claims had been called into question. As already introduced and detailed in Section 6.5, pro-Early Treatment physicians were also able to bolster their arguments with additional rhetorical strategies, such as framing the situation as a 'war setting,' where the urgency of the circumstances justified, and even demanded, 'all attempts'.

Next, I will examine how the anti-scientific network constructed alternative frameworks for evaluating evidence. This move from contestation to co-construction was crucial – it was not enough to simply question established evidence hierarchies; the network needed to provide an alternative system that could legitimise 'Early Treatment' while maintaining scientific credibility.

7.3.2 Creating and Promoting Alternative Frameworks for Validating Evidence

The anti-scientific network's most significant construction was their interpretation of 'evidence-based medicine' (EBM). While EBM traditionally emphasises systematic reviews and randomised controlled trials, network members reframed it to elevate clinical experience and observational studies. This reframing exemplifies what Jasanoff[437] describes as boundary work – the process of redrawing lines between what counts as legitimate scientific knowledge and what does not.

Again, Ricardo Zimerman's testimony provides perhaps the clearest articulation of this alternative framework:

[437] Jasanoff (n 117)

> Evidence-based medicine is about positioning oneself with the best available evidence. Ultimately, it's just a tool in Medicine, which is singular: to care for your patient.[438]

This statement embodies many of the strategies discussed in this Chapter. Importantly, the redefinition of EBM accomplished several things. First, it distorted the meaning of the term to centre it around patient-care, as opposed to scientific rigour and the needs to find the best available evidence. In doing so, it borrowed the authority of the term, and used it to sustain the façade of science but advocating for the loosening (to some extent abandonment) of scientific standards. Second, this use of the term shifted the focus from population-level evidence to individual patient care, which reframes the discussion in terms of what is considered adequate evidence for policy action. Finally, the proposed redefinition flexibilised the standards of evidence to a high degree of subjectiveness and ambiguity pertaining to what the practitioner, or even the patient, seek in care. This created space for accepting lower-quality evidence by emphasising availability of a drug for off-label use over quality and effectiveness.

The network further developed this framework by promoting what they referred to as a sort of 'real-world evidence', which presented as a form of self-evident truth derived from practical experience. Francisco Alves, during his testimony, explicitly privileged this type of evidence over traditional clinical trials: 'We struggle with the evidence we acquire day after day, as this defines the much-talked-about evidence-based medicine, the best available evidence, professional experience, and values'.[439]

This emphasis on 'real-world' evidence was particularly effective because it resonated with public understanding of how medicine should work – doctors treating

[438] Senado (n 324)

[439] Ibid

patients based on direct experience rather than abstract research and the highly complex, inaccessible and some may say technocentric methods that support science. It also created a false dichotomy between clinical experience and research evidence, suggesting that privileging one meant rejecting the other.

As we can see, within the space of the CPI, the anti-scientific network was reshaping the boundaries of scientific evidence and standards to include and even prioritise the individual practitioner. The network's alternative framework emphasised the role of medical autonomy in evaluating evidence. Mayra Pinheiro repeatedly argued that individual physicians should have the authority to determine what constitutes valid evidence. The quote above anticipates how medical autonomy was also used to justify alternative solutions, discussed in the next Subsection 7.3.3.

The appeal to medical autonomy served multiple purposes. It created a legitimate-seeming space for accepting alternative evidence while also protecting network members from criticism by positioning scepticism of 'Early Treatment' as an attack on medical freedom and on the practitioners who were risking their own well-being treating Covid patients. In the quote by Pinheiro, she additionally reframes of the evidence implying it already is standard practice in the SUS, implicitly shifting suspicion on those challenging Early Treatment.

Meanwhile, critics like Luana Araújo identified how this framework undermined scientific evaluation. She argues: 'There is a misconception in this discussion. One thing is what you are bringing here about the clinical management of a patient... The problem is using it as a public health strategy'.[440]

[440] Senado (n 435)

However, the network's alternative framework of evidence effectively blurred the boundaries between individual clinical decisions and public health policy, making such distinctions less persuasive to the public.

The network's success in challenging traditional standards and establishing alternative frameworks laid the groundwork for their final strategy which enabled scientific relativism: the systematic exploitation of scientific uncertainty. By creating an environment where multiple forms of evidence appeared equally valid, they could strategically emphasise uncertainty when it served their purposes while claiming certainty about Early Treatment's benefits.

7.3.3 Exploiting Scientific Uncertainty to Promote Evidence Relativism

The network's exploitation of pandemic urgency demonstrates the manipulation, in a crisis situation, of what Jasanoff's calls 'civic epistemology' to subvert science. The anti-scientific network leveraged available social forms of establishing facts to challenge established scientific knowledge.[441] By positioning scientific caution as a luxury that pandemic conditions could not afford, the anti-scientific network created an 'emergency epistemology' – where the usual rules of scientific validation could be suspended in favour of immediate action. In this setting, such rules would be malleable, providing the network with the space to advance its own interests.

The effectiveness of this approach lay in its selective deployment of uncertainty: ambiguity in terms, uncertainty of risks, of scientific evidence, of the appropriate policy-response. When confronted with evidence against Early Treatment, network members

[441] Jasanoff (n 117)

emphasised the provisional nature of all scientific knowledge. However, when promoting their preferred treatments, they would claim certainty based on clinical experience. This selective scepticism strategically explores co-production to foster doubt to reorganise knowledge and the social order. In this case, uncertainty was carefully managed to serve the network's ends.[442]

Congressman and physician Osmar Terra's testimony demonstrates this sophisticated manipulation. He states: 'Senator, I do not start from the assumption that everything I say is correct as science dictates. But I try to do this: seek for science'.[443] This apparent humility conceals the use of boundary work to claim scientific authority at its most effective form – simultaneously acknowledging science while undermining its ability to reach unambiguous conclusions.

The network's success in manufacturing scientific uncertainty created the conditions for their next strategic task: establishing who had the authority to evaluate and interpret scientific evidence. Having challenged traditional evidence hierarchies and created alternative frameworks for evaluation, the network needed to establish who could legitimately navigate this uncertain scientific landscape. This section looked at the manipulation and distortion of evidence. In the next section, I will analyse how this strategy was concurrently employed at the level of scientific authority to assert the credibility of individuals.

[442] Jasanoff (n 205)

[443] Senado Federal do Brasil, CPI da Pandemia, 'Reunião nº 10051, 2021', meeting held on 22 June 2021, dedicated to the testimony of federal deputy Osmar Terra, https://legis.senado.leg.br/atividade/comissoes/comissao/2441/reuniao/10051 accessed 8 January 2025 (Author's translation).

7.4 Constructing Expert Authority

While establishing uncertainty around scientific evidence and disputing what were the facts with regards to the pandemic, the anti-scientific network faced a parallel and equally important task: determining who had the authority to navigate this uncertainty. Rather than simply rejecting scientific expertise, the network redefined the hierarchy of scientific authority to privilege clinical experience and forms non-scientific knowledge over research expertise.

The analysis of the testimonies from those who based their arguments on this idea of clinical experience as source of scientific authority shows how other civic epistemologies were important to downplay scientific procedures and standards. The network's success lay in its ability to create new hierarchies of expertise under the appearance of scientific legitimacy.

The network's construction of expert authority operated through three interconnected strategies. First, they built medical authority by elevating clinical experience above other forms of expertise using rhetorical and moral arguments (7.4.1). Second, they leveraged institutional credentials to leverage authority while selectively challenging and discrediting competing institutional authority (7.4.2). Finally, they systematically delegitimised opposing experts by redefining what counted as valid expertise (7.4.3).

7.4.1 Building Medical Authority

The network's construction of expert authority centred on a form of boundary work that fundamentally redefined the hierarchy of scientific expertise in Covid treatment. This strategy is tied to the aforementioned process of elevating clinical experience above other forms of scientific knowledge. The network attempted to

subvert the scientific and policy-making authorities in public health, such as public health professionals or CONITEC, to place *selected* physicians as a primary source of health policy. This strategy systematically repositioned physicians as the ultimate arbiters of scientific truth about Covid treatment.

This boundary work operated through several interconnected mechanisms that we can scrutinise and a form of co-production.[444] First, by strategically conflating medical practice with scientific expertise, the network skewed the epistemological processes of establishing knowledge in favour of lower-quality sources of science, such as studies using biased samples, poorly conducted, based on personal experience. Nise Yamaguchi demonstrated this strategy of conflating science and other forms of knowledge in her opening statement to the CPI: 'My goal is to be here as a technical expert – as a technical expert, as a doctor, and as an invited guest.' The deliberate parallelism of 'technical expert' alongside 'doctor' is more than simple emphasis of her professional capacities; it reiterates this placement of physicians as an equal source of scientific knowledge as people producing scientific research. In Yamaguchi's case, she was summoned as a mandatory witness, instead of an investigated deponent, a technicality she argued this to support the idea that her participation was based on her scientific expertise and not her involvement with the Shadow Cabinet.

The systematic preferences of experiential claims over any other approach, creating a primacy of the physician's views over that of academics and other researchers in the field was also an offensive strategy. This approach purported to be the only valid source of expertise, a narrative that positioned direct clinical experience and discredited the others. Francisco Alves articulated this position:

[444] Jasanoff (n 205)

> It is us, physicians, who speak… not the science communicator, not the doctor who has never treated anyone [references to Natalia Pasternak and Claudio Maierovich]. It is us who are on the front lines treating, who have to go to the family and say: 'I'm sorry, mother, your son has died' (Author's translation).[445]

This narrative exemplifies a highly emotionally loaded attempt to set oneself in a place of moral superiority and sole source of knowledge. These claims, combining professional authority with moral weight, leveraged the physician's authority and ultimately the power of the network.

This strategy was used to attack other scientists who engaged in social media to disseminate findings, explain the relevant science, and engage with a broader audience. These communicators included, for example, the deponent Dr. Natalia Pasternak PhD and YouTuber and PhD in microbiology Atila Iamarino who were receiving much attention at the time for explaining scientific findings to large audiences online. The strategy of discrediting was also ambiguous and self-serving to the extent that many of the members of the anti-scientific network relied on social media to promote their discourse. Social media became one of the most important forms of dialoguing about scientific production around Covid-19. The use of social media networks will be further explored in Chapter 9.

This experience-based claim to authority gained additional power as the network transformed clinical experience into moral authority through emotional references to patient care and life-saving interventions. This moral dimension proved particularly

[445] Senado (n 324)

powerful because it resonated with public understanding of medical care as a fundamentally ethical practice.

The narrative simultaneously operated this boundary work and established the superiority of physicians in many facets, systematically delegitimising other forms of expertise. Anti-scientific network members dismissed epidemiological evidence as 'theoretical' or characterised public health recommendations as 'bureaucratic,' claiming which authorities and whose expertise could be mobilised for specific political ends while maintaining scientific credibility.

Again, selectiveness comes into play. Boundary work was employed to redraw limits of knowledge and responsibility for political actions based on scientific knowledge. By reframing knowledge, the anti-scientific network used the newly drawn lines of expertise to deny liability for public policy decisions and the paths taken in Brazilian politics, or in derived from interactions and exchanges investigated by the Senators in the CPI da Covid. How the redrawing lines of science was used to manipulate accountability will be further discussed in Chapter 8.

Another facet of the issue of expertise is how the network's manipulation of scientific authority markers further demonstrates the 'hybrid' nature of expert authority, where experts are both sources of 'objective' knowledge but also act with political interest. As demonstrated by Nise Yamaguchi's statements, medical authority was used as a foundation for denying any interests other than those that supported the identity and authority of the physician, such as the interest in saving Brazilian lives. In this framework, scientific authority was portrayed as incompatible with, and completely opposed to, all aspects of daily life.

In Nise Yamaguchi statements, medical authority was a standing ground for denying any alternative views and interests in the pandemic response. Doctors had a

monopoly over the moral claim of saving Brazilian lives, and therefore any other public measure that aimed at these objectives. In these terms, the anti-scientific network, portrayed scientific authority as incompatible and completely opposed to the regular Brazilian, who lived their lives, went to work, wanted to continue in normality – who was protected by doctors and pushed into isolation by technocratic scientists. This was reinforced by a positive public perception of doctors and a strong sense of unity and identity of this professional class.

The success in establishing the 'hyper-authority' of the physician inverted what Jasanoff idealised as the 'cascade of deference'.[446] In her work, Jasanoff discussed the criteria of certainty and expertise to guide the relationship between science and politics, where politics should 'defer' to science to a degree where solutions were more clearly scientifically established and oriented, and vice versa. By placing the physician at the summit of a hierarchy of expertise and technical authority, from a moral and scientific perspective, the anti-scientific network discarded the need of practitioners to 'defer' to science and politics. Even Natalia Pasternak, PhD in Microbiology and science communicator, often had to adopt a defensive positioning. Being challenged over and over again about her credentials and experience in saving lives, to which she answered, 'I will leave patient management to the doctor and talk about the epidemiological issue'. In other words, she had to insistently maintain the frame of the public health debate and her credentials in face of an intensely moralised attack.

7.4.2 Institutional Authority and Credentials

The anti-scientific network's construction of authority points to the important intersection between institutional power to deploy a public health measure and its

[446] Jasanoff (n 278)

legitimacy derived from expert opinion. This is an interesting connection point between Jasanoff's work on scientific expertise and Castells' theory of a network society. The construction of expertise builds authority over a given subject, which in turn is used to foster legitimacy for certain responses to the pandemic. This legitimacy is then exploited by the anti-scientific network to pressure institutions, such as the SUS, when the solution proposed by the institution opposes their political programme.

Curiously, some of the members of the anti-scientific network held simultaneously a clinical and an institutional position, which they would appeal to at convenience. This dialogues with a point noted in Chapter 6, where certain nodes have 'hybrid' positions: they are at the same time in the anti-scientific network and in the public health institution. In the previous Chapter 6, I discussed how this ambiguous position could be used as *network-switching* power, mobilising elements external to the anti-scientific network to achieve the network's goals. Here, I will discuss how some deponents used the strategic deployment of institutional authority, while not being constrained by an official institutional position.

Authority is also built through references to one's affiliation, increasing based on prestige, accomplishments, and other merits. The anti-scientific network did not hesitate to criticise the SUS or international organisations such as the WHO. Nonetheless, they members of the anti-scientific network appealed to the membership of similar structures when it was convenient for them. This self-serving reference to institutional membership was an exercise of 'calibration,' where the anti-scientific network would adjust their support or defiance to institutional measures according to the strategic convenience. They evoked their institutional authority or affiliations as they saw fit.

For example, below I present contrasting statements from Mayra Pinheiro and Dr. Nise Yamaguchi. Both were members of the anti-scientific network, and the

excerpts illustrate an ambiguous treatment of institutions, depending on how it served their goal or built their authority. Mayra Pinheiro held a dual credential as Secretary at the Ministry of Health and independent physician, her testimony reveals she evokes her authority from multiple sources. Meanwhile, Nise Yamaguchi leveraged her university affiliations, while throughout the testimonials, she and other network members would criticise the rigidity, slowness, and distance from practice of academic institutions:

> **Yamaguchi**: Not at all. This data was provided by the Governor of New York. They conducted a study showing that patients were coming from home and that lockdown alone would not solve the problem. So, this was discussed... **The World Health Organisation itself later said that it was something for extreme situations. Lockdown also serves to provide structure, it was used in Brazil to provide structure.** It alone does not solve the contamination issue, because people also get infected at home. So, we need joint measures; at no time isolated measures (Emphasis added and Author's translation).[447]
>
> And
>
> Pinheiro: In a situation of war, we use all available evidence to save people, provided that we are dealing with safe medications. And currently, we have no shortage of evidence... We have evidence of the action of drugs considered for off-label use in

[447] Senado (n 330)

> vitro, as well as individual experiences, the expertise of specialists, and the opinion of experts (Author's translation).[448]
>
> **Pinheiro**: The **New England Journal of Medicine**, one of the **most prestigious journals in the world**, published an editorial last week emphasising the need to find therapies, preferably oral, for Covid-19, particularly for the new variants that may evade the action of vaccines. We are facing a serious disease that has caused the collapse of healthcare systems and the deaths of millions of people worldwide (Emphasis added and Author's translation).[449]

Pinheiro's statement contains a two-tiered discursive strategy to foster authority. She was a member of the Former Ministry of Health and repeatedly appealed to her experience in public health bodies to support her claims. As such, her reference to 'all available evidence' is a boundary-work exercise that creates equivalence between institutional protocols and individual clinical experience. At the same time, by loosely framing the situation as a 'war', she justifies departing from institutional constraints while maintaining institutional authority.

Meanwhile, throughout the testimony Yamaguchi invokes her affiliation with USP, one of Brazil's most prestigious universities, to establish scientific credibility. Simultaneously, she challenges the WHO's authority, affirming its authority only when it confirms her own agenda, and positioning herself as a legitimate critic of international institutions.

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[448] Senado (n 325)

[449] Ibid

This aspect of the anti-scientific network's construction of authority stemmed from the draw legitimacy from multiple sources, often conflicting sources, simultaneously. When institutional authority supported their positions, network members could invoke their official roles and institutional affiliations. When institutions opposed Early Treatment, the same members could claim professional autonomy and clinical expertise as superior to institutional constraints. In a third scenario, when institutional authority could translate into the political power to influence decisions at the risk of accountability, they would strategically distance themselves, maintaining the appearance of independence while avoiding responsibility for controversial actions.

7.4.3 Delegitimising Opposing Experts

The anti-scientific network's construction of authority extended beyond establishing their own expertise to actively delegitimising competing experts. This process shows how the anti-scientific network pushed the 'contested boundaries' of science,[450] manipulating also where the lines between scientific and political decision-making are drawn. In the struggles over who has the right to speak authoritatively about scientific matters, the network developed strategies for questioning other experts' legitimacy and claim to have the best answers in a context of scientific uncertainty.

Central to this strategy was a type of 'expertise inflation,' where they systematically expanded the scope of clinical authority, claiming political authority, while simultaneously constraining what counted as valid expertise. Network members transformed their experience with individual patients into claimed authority over

[450] Jasanoff (n 117)

epidemiology, public health policy, and statistical analysis. Zimerman's testimony portrays well this strategy:

> When does a person have moral weight to speak? When they treat, or when they do science about it. Not when they are a columnist for some... Anyway, that's irrelevant to us scientists (Author's translation).[451]
>
> …
>
> When politics gets involved, and from both, three, four, five sides, I don't know how many sides there are, things go downhill. So, we need to take some of the passion out of this issue and focus (Author's translation). [452]

These statements establish a certain version of treatment experience as the primary source of legitimate expertise while dismissing other forms of scientific authority, and even dismissing opposing views as 'passion' or 'politics'. While the deponents and the senators disputed adequate science in the CPI, the network's delegitimisation strategy was effective because it addressed people outside the scope of institutional spaces and outside of the CPI da Covid's debate. In the realm of public debate, in the space where civic epistemologies have a strong influence in establishing facts, the anti-scientific network was able to capitalise the moral high ground they constructed for physicians. Physicians around the country felt entitled to have a say on what was scientific evidence, and also conflated their own experiences with *scientific* evidence.

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[451] Senado (n 324)

[452] Ibid

An interesting layer of this dispute emerged when the issue around 'Early Treatment' involved challenges to this medical authority within the medical field itself. This dynamic played a significant role during the CPI hearings, revealing two key aspects. First, medical authority was rarely questioned, even by opposition senators, who at least acknowledged and respected the 'craft of saving lives. Jurema Werneck, invited to present an Amnesty International study critical of Early Treatment, was occasionally positively referred to as a physician by opposition senators. Such effort was counterbalanced by pro-Early Treatment senators, who questioned her inactive medical license. Similarly, Claudio Maierovitch's retirement was also mentioned by those government senators. This left Luana Araújo as the strongest figure of medical authority against Early Treatment. Her status as an active practitioner bolstered her credibility, earning recognition from government senators and significant praise from the opposition. However, senators supporting 'Early Treatment' shifted the debate by questioning the number of patients she had treated, framing medical authority as a feature exclusive to their network of advocates.

> **Senator Luiz Carlos Heinze**: How many Covid patients did you treat where you had reliable information that the treatment gave positive results? Do you have a number of patients?
>
> **Luana Araújo:** For Covid, I don't know, I can't give you an exact figure. I am... I don't have a team; it's just me, and I've been working non-stop for 14 months.
>
> **Heinze**: How many...
>
> **Araújo**: It was quite a lot of people. I can't give you a number.

> **Heinze**: Okay.
>
> **Araújo**: But there were many patients.
>
> **Heinze**: It would be important...
>
> **Araújo**: And I didn't prescribe chloroquine, ivermectin, azithromycin, zinc, vitamin D, or any of those things to any of them. Actually, I didn't even consider prescribing vitamin D because we know that a patient should only take vitamin supplements when a laboratory test confirms a deficiency. And while many people in the world have such deficiencies, well, that's another story.
>
> **Heinze**: Okay (Author's translation).[453]

Between the senators as well there was a dispute about how physicians positioned themselves relative to technical knowledge. While opposition senators with medical backgrounds, like Otto Alencar, used their expertise to challenge network claims, pro-government senators often deferred to physician authority while dismissing other forms of expertise.

Pro-government senators worked to reinforce the authority of the anti-scientific network by shielding the claims of physicians from the interrogations from non-medical senators. For example, Senator Marcos Rogério, pro-Early Treatment, repeatedly stated 'We are not in front of uninformed spectators […]',[454] always heightening the views of

[453] Senado (n 435)

[454] Senado (n 325)

the anti-scientific network over 'lay' senators. Often, this reframing transformed institutional scientific critique into bureaucratic interference, antagonizing critics and positioning them as detached from medical reality regardless of their credentials.

In these disputes, critics of 'Early Treatment' often had to defend their authority through also asserting absence of political interest, showing that this rhetoric seemed unavoidable. They also had to defend systemic, institutional knowledge over the individual, demonstrating that the protocols were not exceptional and had been previously employed by the public health system on other crises.

> **LUANA ARAUJO:** I'm not a politician; I'm a doctor, an infectious disease specialist, an epidemiologist, a technician, loyal to my patients, guided by the medical oath I took. I graduated from the Federal University of Rio de Janeiro, with a residency in infectious diseases also from the Federal University of Rio de Janeiro. I'm a daughter of Minerva (Author's translation).[455]
>
> We had experience in doing this through our Unified Health System in various diseases. Measles is one of the great examples, but we have many diseases of a similar nature, transmitted via respiratory routes, that we have managed to control throughout our history (Author's translation).[456]

The process of 'inflation' of medical authority did not go unchallenged, as opposition senators picked up the construction of a 'hyper-authority' and tried to find holes and inconsistencies in that discourse and turn it against these claims of superiority.

[455] Senado (n 435)

[456] Senado (n 435)

At one point, Senator Otto Alencar's questioned Nise Yamaguchi about the difference between protozoa and viruses to demonstrate the doctor's lack of knowledge even within her own field – and Yamaguchi in fact had a hard time answering.

In an attempt to accuse the process of 'inflation' of authority, basic scientific knowledge was used in a test of legitimate expertise. Alencar tried to show that the physicians that claimed authority over the scientific facts lacked basic scientific knowledge to discern between the effects of the medication. He asked Yamaguchi: 'Please! You're a trained doctor. If you praised your curriculum so much... Tell me, please, what a protozoan and a virus are'.[457] These attempts demonstrate how medical expertise itself became a site of contestation. However, the fact that such questioning came from a physician-senators underscores the enduring deference to the medical profession, even within a context of dispute.

Senator Alessandro Vieira, an opposition member without a medical background, expanded the critique of medical authority by anchoring his questioning in scientific principles. He challenged Nise Yamaguchi on the varying quality and standards of scientific evidence by presenting an analysis presented by Professor Paulo Martins Filho of the Federal University of Sergipe. Vieira stated, 'Within this scale of quality, I requested Professor Paulo Martins Filho to analyse 2,807 studies from across the globe based on the highest-validity scientific databases'[458] emphasising the professor's conclusion that none of the studies met those rigorous standards.

Finally, when faced with opposition from other *medical* institutions or research organisations, network members fell back to the medical autonomy and clinical experience, mentioned in the previous subsection as superior to institutional knowledge

[457] Senado (n 330)

[458] Ibid

and holding moral superiority. As a result, the anti-scientific network's claim could not be contested even by physicians themselves – producing an incontestable claim for the effectiveness of Early Treatment. I will discuss the strategy of medical autonomy, an important theme of the anti-scientific network, in the next section.

In conclusion, the dispute over expertise was attempt at fundamentally 'reordering' knowledge, in Jasanoff's terms, and reshaped what counted as legitimate expertise. Having discussed the process of who could speak authoritatively about Covid but how scientific authority itself operated in public discourse, the next Section will analyse how this authority of the clinician and the distortion of evidence played in a broader reframing of the pandemic.

7.5 Reframing Covid: From Public Health Crisis to Clinical Challenge

Having established alternative forms of evidence and expertise, the anti-scientific network sought to fundamentally reshape how the pandemic itself was understood. Their success lay in transforming Covid from a public health crisis requiring collective action into a series of individual clinical challenges requiring immediate medical intervention. This reframing operated through carefully chosen metaphors and narratives. When Nise Yamaguchi argued 'Every life matters a lot,' or when Mayra Pinheiro described the pandemic as a 'war' requiring 'all available weapons,' they weren't simply justifying Early Treatment. They were reconstructing what counted as relevant evidence, legitimate expertise, and appropriate solutions.

The network's success in challenging traditional evidence hierarchies and establishing clinical experience as paramount created the conditions for fundamental disputes over how problems should be understood and addressed. Building on the new

framework of evidence the anti-scientific network set forth, by successfully positioning randomised controlled trials as impractical and elevating clinical observation, the network opened space for framing Covid primarily as a doctor-patient issue rather than a public health challenge. Similarly, their construction of physician authority as superior to other forms of expertise naturalized individual clinical intervention as the primary response to pandemic challenges.

The following subsections examine how these frames operated through three interconnected mechanisms: the establishment of a clinical-public health divide, the enablement of alternative solutions, and the deployment of medical autonomy as frame defence. This analysis reveals how the network's framing strategies built upon their previous discursive achievements while creating new forms of legitimacy for Early Treatment. This strategic framing transformed 'Early Treatment' from a controversial intervention into an apparently reasonable response to the pandemic.

7.5.1 Clinical vs Public Health Framing

The fundamental tension in Brazil's Covid response centred on whether the pandemic should be understood primarily as a clinical or public health challenge. This reflected a general political view, anchored by the discussion on evidence and expertise. This was not merely a theoretical dispute; it represented competing epistemologies, and embedded in them there was as well implicit risk assessments and political decisions.

The clinical frame, promoted by network members, positioned Covid primarily as a doctor-patient relationship issue requiring immediate medical intervention. Nise Yamaguchi exemplified this framing in her testimony:

> Because, you see, when the patient is treated early - like I had 340 patients whom I treated early, and only one patient had a

> fatal outcome - then we know that makes a difference. We say that only 15% will progress to severe situations: that's a lot! Why should we wait for people to progress to severe situations? Every life matters a lot (Author's translation).[459]

This framing accomplished several things simultaneously. First, it naturalised individual treatment as the primary response to a population-level crisis. Second, it subverted statistical evidence about treatment efficacy into a moral imperative about saving individual lives. Third, it positioned waiting for systematic evidence as lethal inaction.

Regarding the first item on the naturalisation of individual treatment as the primary response to a population-level crisis: by emphasising doctor-patient relationships, the network transformed a public health emergency requiring coordinated societal response into a series of individual and disconnected medical decisions. This framing made 'Early Treatment' appear as a natural extension of normal medical practice rather than a departure from evidence-based pandemic response.

On the second item, similar to what was discussed in sub-section 7.3, the transformation of statistical evidence into moral imperative did not merely challenge statistical evidence about treatment efficacy; they reframed the entire burden of proof for justifying the adoption of new medical interventions. New forms of actions need to be justified, and not inaction that should be justified – which is what Yamaguchi proposes. This made opposition to 'Early Treatment' appear not just scientifically mistaken but morally questionable.

[459] Ibid

Finally, by positioning systematic evidence gathering as potentially lethal inaction, it justified departing from scientific standards while making such departure appear as responsible medical practice rather than scientific deviation.

In contrast, critics emphasised the pandemic's epidemiological nature. This frame conflict extended beyond technical disagreement to fundamental questions about what constituted appropriate pandemic response. Pedro Hallal and Luana Araújo articulated this competing frame:

> One thing is what you are bringing here and what Dr. Ricardo brought last week, for example, about the clinical management of a patient... This is obviously within medical autonomy. No one is discussing that here. What we in public health have always discussed, and this has been our stance, is the idea of conveying to the population a sense of security (Author's translation).[460]

> It is essential for us to understand that combating the pandemic is much larger than the adoption of any medication... When we talk about prophylaxis, we are referring to preventing the person from becoming ill or reducing the chance, the risk, of the person becoming ill (Author's translation).[461]

The effectiveness of the clinical frame lay in its ability to acknowledge public health concerns while subordinating them to clinical priorities and solutions. The

[460] Senado Federal do Brasil, CPI da Pandemia, 'Reunião nº 10053, 2021', meeting held on 24 June 2021, dedicated to the testimonies of Pedro Hallal and Jurema Werneck, https://legis.senado.leg.br/atividade/comissoes/comissao/2441/reuniao/10053 accessed 8 January 2025 (Translation by author).

[461] Senado (n 435)

network did not need to debunk the evidence of the people promoting public health measures, they simply consistently positioned clinical intervention as primary while presenting public health measures as secondary or complementary. This allowed the network to appear comprehensive while fundamentally shifting the frame of reference.

The temporal dimension proved crucial to this framing contest. The network exploited the gap between immediate clinical needs and the slower process of systematic public health measures. By emphasising urgency through war metaphors and life-or-death rhetoric, they could position 'Early Treatment' within recognised medical frameworks while bypassing traditional public health evaluation. This strategy resonated particularly well with public understanding of medical care, where immediate action is often valued over preventive measures.

7.5.2 Alternative Solutions

Having established Covid as primarily a clinical challenge, the network developed strategies for legitimising 'Early Treatment' as complementary measure, that does not require the same scientific scrutiny as other treatments. Central to this effort was presenting 'Early Treatment' not as opposition to established measures but as an additional, necessary tool in pandemic response.

Ricardo Zimerman articulated this strategy most clearly:

> And undoubtedly, when we are facing such an enemy, we have to come armed with all weapons. That's why we use complementary measures. No one is in favour of medication

> and against vaccines. Does Your Excellency want to enter a war with only one weapon? (Author's translation)[462]

This martial rhetoric help the 'Early Treatment' proponents argue that their solution fulfilled the requirements of what Jasanoff terms 'serviceable truth',[463] as a sufficiently scientifically validated solution for policy action. Fundamentally, in readjusting the framing of the problem, the anti-scientific network was changing the standard for robustness, replacing scientific knowledge with social perception of facts, and using that to justify the use of public resources and ground collective action.

By positioning 'Early Treatment' as one of many *weapons* against the virus, network members could privilege their preferred interventions, almost regardless of what scientific production was saying. The war metaphor proved particularly effective because it transformed scientific caution into strategic vulnerability. The network's solution-enabling strategy operated through careful management of uncertainty for political purposes. Francisco Alves demonstrated this approach through his parachute metaphor:

> It's like asking a passenger on a plane in distress, a plane that's crashing, and there's only one parachute on board, and that parachute doesn't have the Inmetro seal. If it doesn't have the Inmetro seal, will that passenger use the parachute or not? (Author's translation)[464]

Or, in another case, when Mayra Pinheiro argued that 'off-label medications' were standard practice, citing that '73 [protocols] include off-label medications,' she was

[462] Senado (n 324)

[463] Jasanoff (n 278)

[464] Senado (n 324). 'Inmetro' is the authority responsible for checking the quality of commercialized products.

not merely describing medical practice, as mentioned in Section 7.4.2. She was creating an equivalence between routine medical decisions and systematic departures from evidence-based practice.

> The fact that a medication is not listed in the label does not imply it lacks value for society or cannot be used by physicians. Just to give you an idea - I would appreciate if you could spare me a few more minutes to clarify - we have 99 clinical and therapeutic guideline protocols at the Ministry of Health - 99. Of these, 73 protocols include off-label medications (Author's translation).[465]

This rhetoric accomplished several things simultaneously. First, it created a false equivalence between tested interventions and unproven treatments. By comparing 'Early Treatment' to a parachute in an emergency, Alves was not simply suggesting similarity – he was erasing crucial differences between proven safety equipment and unvalidated medical interventions.

Second, the framing of regulatory caution into bureaucratic obstruction, mentioned in the previous subsection. When network members characterised scientific validation processes as bureaucratic delays, they were not merely criticising slowness – they were fundamentally redefining what counted as proper medical safeguards.

Third, the repositioning of 'Early Treatment' as a common-sense, survival-driven response that not only justified its use but also framed it as a 'reasonable' institutional response – which dispenses scientific knowledge. By framing the choice as one between immediate action and certain death (like choosing whether to use an uncertified

[465] Senado (n 325)

parachute), the network transformed scientific questions about efficacy into moral questions about saving lives – and the willingness to attempt any possible measure, even if unmotivated. This made opposition to 'Early Treatment' was therefore framed not just scientifically mistaken but morally indefensible.

This rhetorical strategy therefore operated simultaneously at multiple levels – emotional, logical, scientific, and moral. It resonated with public understanding of emergency response while systematically undermining standard processes for evaluating medical interventions.

Closely related to these rhetorical strategies was the network's success in manipulating the perceptions of the audience with regards to speed of solutions and timing of responses. By emphasising immediate availability compared to vaccines or systematic public health measures, they increased urgency for specific alternatives. They opposed the available solutions to the time required for traditional scientific validation became itself a barrier to saving lives. This strategy proved particularly effective because it resonated with the public's pressing desire for concrete, immediate solutions over abstract, long-term measures.

All of this culminated in 'Early Treatment' sounding as a reasonable, even necessary response to pandemic challenges – paradoxically scientifically 'proven' and necessary regardless of science. This was a fundamental change in how medical interventions are evaluated and validated in crisis situations.

7.5.3 Domain Authority and Frame Insulation

In previous section, I discussed how the network's success in establishing Covid as primarily a clinical issue created a space where certain claims become protected from

external scrutiny through the construction of exclusive domains of expertise. Here I discuss how this insulation was produced. A powerful example of this insulation manifests in how critics had to preface their challenges to deponent's claims with acknowledgments of clinical authority. Pedro Hallal's testimony exemplifies this defensive positioning, always acknowledging the doctor's autonomy to prescribe:

> One thing is what you are bringing here and what Dr. Ricardo [Zimerman] brought last week, for example, about the clinical management of a patient, which involves, 'oh, I'm going to use this combination, I'm going to use another combination of medications.' This is obviously within medical autonomy. No one is discussing that here. What we in public health have always discussed... is the idea of conveying to the population a sense of security (Author's translation).[466]

This deference demonstrates how effectively the boundary work over authority was effective – where even challenges to claims from doctors must first recognise their authority and legitimacy to claims about the pandemic. The pattern repeated across expert testimonies, as when Luana Araújo had to establish her medical credentials before offering criticism: 'I'm not a politician; I'm a doctor, an infectious disease specialist, an epidemiologist, a technician, loyal to my patients, guided by the medical oath I took' (Author's translation).[467]

Even Senator Otto Alencar, despite his medical background, had to carefully frame his challenges to anti-scientific network members within medical discourse. His questioning of Nise Yamaguchi on basic knowledge of protozoa and viruses, mentioned

[466] Senado (n 461)

[467] Senado (n 435)

in subsection 7.4.3, shows how criticism had to operate within, rather than challenge, the clinical frame.

Even when presenting contrary evidence, critics found themselves first acknowledging and reinforcing the primacy of clinical experience and physician autonomy. This dynamic created certain forms of knowledge become effectively immunised from external criticism. Even specialised knowledge can be undermined by its own complexity, as the numerous procedures from science to establish scientific rigour were here reframed as distance from 'real life' and 'practical' knowledge. When morality, pragmatism and frontline experience took the centre stage they thwarted the relevance of discussing scientific practice.

This framing success rested on the mutually reinforcing relationship between clinical authority, previously discussed, and the exercise of redefining the problems around the pandemic. The more Covid was understood as primarily a clinical challenge, the more physician authority appeared natural and necessary. Conversely, the more physician authority was accepted, the more reasonable clinical framing appeared.

Ultimately, by establishing physician authority as paramount, transforming scientific questions into matters of clinical judgment, and insulating medical decisions from external scrutiny, the network fundamentally altered how pandemic response could be discussed and evaluated.

The following Section examines how this carefully constructed framework enabled the network to generate Castells' 'communication power' or the ability to shape public understanding and response to the pandemic through control of meaning-making processes.

7.5.4 Building Public Reason Through Scientific Discourse

The anti-scientific network's success in promoting 'Early Treatment' as a legitimate pandemic response is an interesting case of 'co-production'. Through carefully orchestrated manipulation of evidence, construction of expert authority, and strategic problem framing, the network created what Jasanoff[468] calls a 'serviceable truth' – knowledge that appears scientifically sufficient to legitimate collective action and the employment of the state's resources towards a political goal.

By creating uncertainty around established evidence hierarchies while promoting alternative frameworks for evaluation, the anti-scientific network fundamentally altered how scientific claims could be validated. The exercise of boundary work carefully redrew the lines between legitimate and illegitimate scientific claims.

This manipulation of evidence was possible not through a sabotage within the institutional practices of science, but externally in the public spaces where science is accepted as actionable facts. In these spaces of 'civic epistemology,' the network established clinical experience as paramount to scientific knowledge. Concurrently, the network members delegitimised other forms of expertise by downplaying scientific knowledge in favour of a 'frontline' or practical experience. In the abovementioned excerpts, when Yamaguchi claimed 'Science walks on both sides' or when Francisco Alves declared 'It is us, physicians, who speak,' they were tweaking hierarchies of scientific legitimacy in their own favour.

The network's framing of Covid as primarily a clinical issue 'stabilised', in Jasanoff's terms,[469] scientific knowledge through social practice. These practices were very different than what pre-existing institutions, such as CONITEC or ANVISA, used

[468] Jasanoff (n 278)

[469] Jasanoff (n 117)

to evaluate efficacy and adequacy of treatments. In this process, knowledge is established in certain 'ontological states' that allow these claims to be intelligible and employed legitimately in other domains. By positioning individual patient care above population health measures, they did not just promote particular treatments – they fundamentally altered what counted as relevant evidence and legitimate expertise.

These elements combined to generate 'public reason' – the basis on which state actions can claim legitimacy in modern societies. Through the integration of scientific language, clinical authority, and moral imperatives about saving lives, the network manipulated co-production and established 'Early Treatment' as not just scientifically valid but morally necessary. Ultimately, using the role of science in modern governance, that is, providing frameworks through which public actions can be justified and understood, 'Early Treatment' was placed as a unique alternative.

7.6 Conclusion: Scientific Legitimacy in Communication power

In this concluding section, I will connect the findings of this Chapter with the overarching framework of the network society. The network's success in establishing public reason through scientific discourse translated directly into 'communication power'.[470] By creating alternative frameworks for validating scientific claims while maintaining scientific appearance, the anti-scientific network was able to push its programme into public discussion about responses to the Pandemic and pressure the scientific and public institutions involved.

One of the forms through which this was achieved, which is one of the facets of communication power, was through *networked* power, or the capacity to pressure social

[470] Castells (n 52)

actors outside of the network, such as having the Prevent Senior or specific physicians collaborate with the network. The political aspects of this networked power will be explored in the following Chapter 8.

Here, the different nodes sharing this discourse effectively cooperated in their own capacity towards the shared goal (programme). Looking back at Castells' theory in Chapter 2 and the analysis in Chapter 6, 'mass self-communication' enabled by digital technologies was critical. The members of the anti-scientific network could claim authority in different spaces and capacities – and with a public audience – simultaneously and through different channels. Much of the boundary work and discourse discussed in the CPI da Covid occurred in this space of internet communication.

Through communication power, the network was able to feed legitimacy back into itself. As shown this Chapter 7, the discourse repeated by scientists and physicians in their testimonies was not only directly aligned with the lay and politically influential reproductions of such arguments, but the intense circulation of cure allegations, personal testimonies, and names and information about doctors who supported 'Early Treatment' served as elements to normalise such arguments, effectively reordering and reframing science and public health.

The network's simultaneous deployment strategies of boundary work at the level of evidence, expertise, and problem framing, enabled them to operate simultaneously through multiple channels of authority. I discussed that in showing how hybrid actors like Mayra Pinheiro could switch between institutional and clinical authority. This identifies yet another form of power Castells identified, the 'network-switching power', which resides in the capacity to relay programming between networks.

Still on the role of 'switching power',[471] I analysed how Nise Yamaguchi cited academic and professional credentials while challenging institutional consensus. This approach reflected hybrid nodes' ability to gather authority from multiple networks, at the same time connect and ensure cooperation between different networks by sharing common goals.

Even when faced with opposition from established scientific institutions, anti-scientific- network members could mobilise to generate 'counter-power'[472] in the same terms of institutionality by invoking medical autonomy. Thus, they sustained scientific authority and mobilised it as communication power through apparent technical legitimacy.

By successfully programming networks to accept their definition of scientific legitimacy, the anti-scientific network established 'Early Treatment' as a legitimate solution, while delegitimising competing paradigms, to a vast portion of the Brazilian population. As such, even in the domain of scientific evidence, networks can generate power by operating not through direct control but through the ability to shape how reality is understood and evaluated.

From Scientific to Political Legitimacy

Turning to the next Chapter, the anti-scientific network's success in generating power through scientific discourse demonstrates the interplay between Jasanoff's concept of public reason and Castells' theory of power in the network society. The anti-

[471] Ibid

[472] Ibid

scientific network created alternative channels of scientific legitimacy that proved remarkably resistant to institutional control. The use of knowledge to produce political action (or inaction) will be discussed next, focusing on this 'distributed irresponsibility' that 'Early Treatment' produced in politics - where ineffective drugs could be widely promoted and still no one was 'responsible' for this solution.

The following Chapter 8 examines how this scientific legitimacy enabled political evasion through analysis of three crucial events: the absence of CONITEC consultation, the positioning of the Federal Council of Medicine (CFM) on medical autonomy, and the Health Ministry's Information Notes 9 and 17. These events demonstrate how the network's construction of scientific authority created spaces where political actors could simultaneously promote 'Early Treatment' while avoiding institutional accountability. This analysis reveals how communication power operates not just through the ability to influence behaviour but through the reshaping how responsibility is understood and assigned.

Chapter 8

The Anti-Scientific Network's Exploitation of Expertise and Side-lining of Accountability Mechanisms to Legitimise Early Treatment

8.1 Introduction

This Chapter examines how political actors in Brazil exercised boundary work and blame avoidance to promote 'Early Treatment' drugs without undergoing the institutional paths for new treatment adoption set out by the SUS. The chapter focuses on how the political nodes of the anti-scientific network to promote the ineffective drugs and yet evade legal consequences during the Pandemic in Brazil.

In this Chapter, I demonstrate how these distorted claims were critical to deploying a political change within the institutional structure of the SUS, side-lining important control mechanisms and legitimising drugs that had not gone through the complete approval process for widescale public use against Covid. This chapter focuses on the political aspects Sub-Research Question 2, namely how political figures of the anti-scientific network used distorted science to *justify* Early Treatment:

> Sub-RQ 2: How was the adoption of 'Early Treatment' justified by members of the anti-scientific network as the best health measure available during the Covid-19 pandemic to the

> detriment of other scientifically grounded measures such as vaccination, self-isolation and social distancing?

This Chapter examines the authority of key figures who played a significant role in the debate surrounding 'Early Treatment' during the Pandemic. Among the supporters of 'Early Treatment' were Ministers Eduardo Pazuello and Marcelo Queiroga, as well as hybrid nodes such as Mayra Pinheiro and Osmar Terra, who were closely associated with the advocacy for these treatments. In contrast, the ministers Luiz Henrique Mandetta and Nelson Teich, along with public representatives Elcio Franco and Antônio Barra Torres, were more openly critical of Early Treatment. The chart below situates these key figures within the broader timeline of the CPI da Covid's investigation.

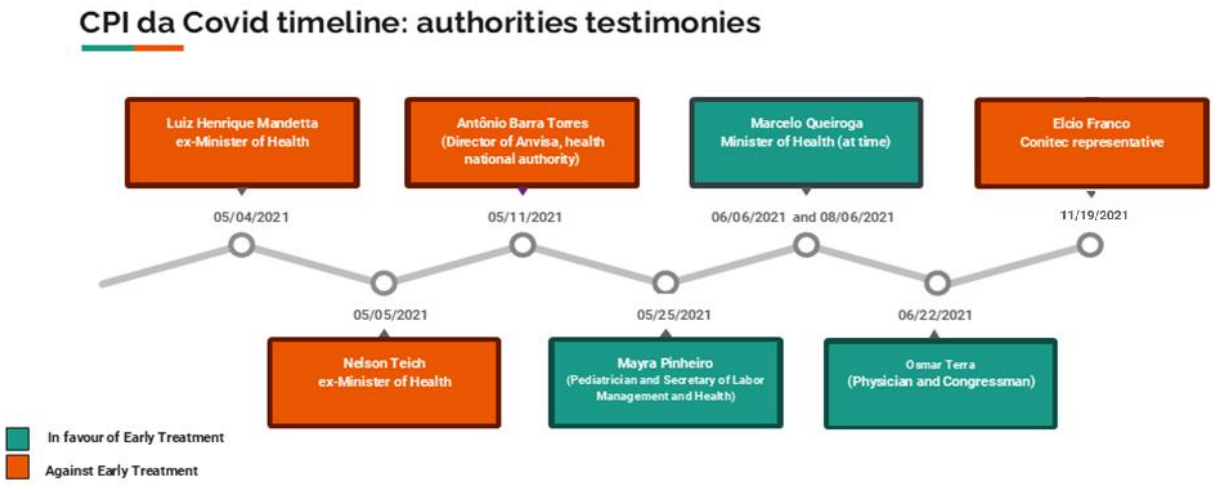


Figure 5: Timeline and names of political deponents of the CPI da Covid.

This Chapter posits that the anti-scientific network sought to neutralise institutional procedures and legal responsibility, such as the mandatory consultation of CONITEC for the incorporation of new treatments, by strategically creating and reinforcing separations between the political and scientific domains. Through Boundary

work, the anti-scientific network separated knowledge from political actions, artificially created formal and informal spaces. It also downplayed the intentional nature of the promotion of 'Early Treatment' and flexibilised the legal obligations the political figures had towards fulfilling institutional steps for treatment approval. Informality and apparent unawareness of adequate science were key in creating 'accountability gaps,' which were effectively blind spots within the mechanisms for reviewing and implementing new treatments by the SUS. When analysed collectively, this created a situation of 'distributed irresponsibility', where no one was to be held accountable for the actions under scrutiny.

To respond to Sub-RQ2 in this Chapter, this analysis draws upon concepts of Jasanoff, Bovens, and Hood to discuss the interplay between expertise, institutional procedures, and legal liability and accountability. In the following paragraphs, I present and overview of the Chapter.

Section 8.2 describes the theoretical framework and concepts used in this Chapter's analysis. Jasanoff's conceptual framework of the three-body problem of expertise how expertise functions in society, particularly in relation to governance, policymaking, and the authority of science. This framework identifies three interconnected 'bodies' that shape the role and authority of expertise. Each of these bodies presents specific vulnerabilities that can be exploited. On top of Jasanoff's framework, I use Bovens' and Hood's work on accountability to describe how these manipulations of bodies of expertise were operated while institutional procedures and guardrails were circumvented. Together, these frameworks reveal how the anti-scientific network was able to simultaneously leverage scientific authority while avoiding responsibility for their actions, shielding the anti-scientific network.

To operate the analysis described above, Section 8.3 examines how the SUS was meant to function and how its functioning was subverted during the pandemic. The SUS

operates through a complex network of institutions including the Ministry of Health, CONITEC (the technical advisory body), and the Federal Council of Medicine. Under normal circumstances, these institutions work together through established procedures to evaluate and approve treatments based on scientific evidence. The chapter traces how these procedures were increasingly circumvented from March 2020 to early 2022, under the influence of the anti-scientific network. This period saw four different Health Ministers, each representing a distinct phase in how institutional procedures were manipulated to promote 'Early Treatment' while maintaining deniability about responsibility, and how President Jair Bolsonaro increased pressure in institutions to push for Early Treatment.

In Section 8.4, I analyse three key cases that demonstrate different strategies of institutional manipulation. First, the Ministry of Health's Information Notes 9 and 17 show how official documents were crafted to promote 'Early Treatment' while maintaining strategic ambiguity about their authority and escape legal liability. Second, the systematic bypassing of CONITEC reveals how institutional evaluation processes were circumvented through strategic inaction and procedural manipulation. Third, the Federal Council of Medicine's positioning on medical autonomy demonstrates how professional authority was redefined to create immunity for 'Early Treatment' promotion. These cases reveal how presentational, agency, and policy strategies worked together to create a complex web of deniability while maintaining influence over health policy outcomes.

8.2 The Political Vulnerabilities of Expertise

This Section builds on the overarching framework to investigate how the same processes of legitimation of 'Early Treatment' were simultaneously and strategically used

by the anti-scientific network to escape legal obligations and consequences connected to the pandemic responses. In the previous Chapter 7, I described the manipulation of public reason during Brazil's pandemic response using the concept of boundary-work. In the subsections below, I will expand on concepts by Sheila Jasanoff to shift the focus and analyse how scientific disinformation was mobilised by political actors.

In Section 8.2.1, I will employ Sheila Jasanoff's 'three bodies of expertise' and public reason frameworks[473] to understand how politics can distort expertise in its favour to legitimise its preferred course of political action. Next, in Section 8.2.2, I will use Bovens'[474] and Hood's[475] work on blame avoidance to discuss how this selective use of expertise was also mobilised to shield their political actions from legal consequences. By framing their actions as being based on scientific evidence and distorting the uncertainty around the Early Treatment, the anti-scientific network was able to mobilise its nodes in the SUS to create a web of blame-avoidance, where documents and political declarations shielded political actors from responsibility.

As a terminology note, in this Chapter I will use the word accountability as 'the obligation to explain and justify conduct'[476] to a relevant public – this includes an actor (e.g. politician), undergoing a specific process (e.g. justification) in a specific forum (e.g. court, CPI). This is different from responsibility, which here refers to specific legal duties and obligations, and liability is the formal legal consequence from breach of duty or wrongdoing. I will refer to these interconnected concepts collectively as legal obligations and consequences and will specify them in my analysis as necessary.

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[473] Jasanoff (n 118); and Jasanoff (n 117)

[474] Bovens (n 337)

[475] Christopher Hood, 'What Happens When Transparency Meets Blame-Avoidance?' (2007) 9 Public Management Review 191.

[476] Bovens (n 337) 447

8.2.1 Manipulating the Legitimacy of Science In and Through the Three Bodies of Expertise

The dialogue between the networked and the evidence-based forms of legitimacy is key to understanding how political figures exploited the anti-scientific discourse around Early Treatment. The concept of legitimacy is central to the analytical framework I propose, as it is a form of power networks can generate in favour of specific political actions, and it can also be derived from technocratic bodies using scientific evidence. Jasanoff's concept of public reason helps explain how scientific claims establish legitimacy for state actions,[477] while Castells' network power explains how networks can arise from collective mobilisation that can produce or challenge legitimacy.[478] Building on Jasanoff's 'three bodies of expertise' framework introduced in Chapter 4, this chapter examines how each component was strategically exploited by political actors in the anti-scientific network.[479]

The first body – scientific knowledge itself – comprises the established research findings, methodological standards, and evidence base that inform policy decisions. In the Brazilian case, this included clinical trials, epidemiological data, and public health research about Covid treatments.

The anti-scientific network exploited a key fragility of this 'body': the inherent uncertainty present in emerging scientific knowledge during a pandemic, further distorted by scientists like Nise Yamaguchi and politicians like Osmar Terra. Political members of the anti-scientific network, like former Minister of Health Eduardo Pazuello, referenced and exacerbated this uncertainty. Pazuello noted in his testimony that, even though vaccination was already at full deployment in the country, 'the

[477] Jasanoff (n 117)

[478] Castells (n 52)

[479] Jasanoff (n 117)

discussion remains [around chloroquine] open until today'[480] using the natural evolution of scientific understanding as an argument justify maintaining 'Early Treatment' protocols despite mounting evidence against their efficacy.

The second body – individual experts – encompasses the scientists, physicians, and technical authorities who interpret and apply scientific knowledge in policy contexts. In Brazil's pandemic response, this included ministers with medical backgrounds like Nelson Teich and Marcelo Queiroga, physician Paulo Zanotto, as well as technical advisors within the Ministry of Health.

The exploitation of this body was particularly evident in how medical credentials were used to establish authority in justifying Early Treatment, although the medical figures owed no accountability for political actions. One example, when interrogated about his positioning on 'Early Treatment' effectiveness, Minister Queiroga emphasised his connection to 'scientific societies' and his knowledge as a physician to attest his expertise on healthcare and treatment. When interrogated about chloroquine, Queiroga refused to produce clear scientific positions on the effectiveness of Early Treatment. In his dual role as physician and politician, he legitimised deploying 'Early Treatment' as a response using his credentials, but paradoxically did not take a stance on the effectiveness as this would imply legal consequences for his actions.

The third body – institutions of advice-giving – consists of the formal bodies and procedures through which scientific knowledge informs policy decisions. In Brazil, these included CONITEC, ANVISA, and the Federal Council of Medicine. The anti-scientific network exploited a fragility of this body: the gap between institutional authority and the mechanisms that trace accountability and liability for actions and omissions. This was

[480] Senado Federal do Brasil, CPI da Pandemia, 'Reunião nº 9998, 2021', meeting held on 19 May 2021, dedicated to the testimony of former Health Minister General Eduardo Pazuello, https://legis.senado.leg.br/atividade/comissoes/comissao/2441/reuniao/9998 accessed 8 January 2025

most clearly demonstrated in the strategic manipulation of CONITEC's evaluation process. In this case, institutional procedures were delayed or intentionally ignored. For example, Minister Queiroga requested a formal evaluation of hydroxychloroquine for Covid as late as 2022, only to immediately reject CONITEC's response (Technical Note 2/2022) without scientific grounds claiming 'the respect for medical autonomy'.

Each of these bodies is a component of expertise and is mobilised to support a final political decision. However, the credibility of each of these bodies stands on fragile grounds. They all depend on the practices that sustain a perception of objectivity, based on the quality of the knowledge they produce, the individuals' credibility, and public trust in their decisions. Rather than simply rejecting expertise outright, political figures manipulated each 'body' of expertise by dialling and channelling their legitimacy according to convenience. They could exacerbate the authority of evidence, credentials, or advice-giving bodies when they saw fit, or discard them as necessary – attacking the fragile independence of each body of expertise.

For the purposes of this thesis, Jasanoff's framework can also be understood as a map of vulnerabilities of expertise, which allow political actors to pressure and shape expertise in a self-serving way. This helps to understand how the political nodes of the anti-scientific network interacted with the wider body of expertise, to extract and maintain only the expertise that served its objectives. In the table below I lay out Jasanoff's concepts as a schematic framework highlighting how each 'body' sustains legitimacy in the public eye.

Table 1: The constituents of the three bodies of expertise, their role, and premises for legitimacy

Body	Comprised of	Requirements for Legitimacy (Jasanoff, n 112 and 112)
Knowledge	Scientific data, research findings, and established theories within their respective fields of expertise.	(i) Credibility and reliability: Produced through rigorous scientific methods, peer-reviewed, and validated by the broader scientific community; (ii) Transparency: Clear documentation of methodologies, data sources, and potential limitations or uncertainties in finding; (iii) Objectivity: Presented in an unbiased manner, free from undue influence by political or commercial interests.
Individual Experts	Personal attributes, experiences, and biases that experts bring to their roles as advisors and decision-makers.	(i) Competence: Necessary qualifications, expertise, and experience demonstrated through advanced degrees, professional certifications, and a strong track record of research and publications; (ii) Integrity: Adherence to ethical standards, avoidance of conflicts of interest, and transparency about potential biases; (iii) Communication: Effective and transparent communication about limitations and uncertainties of knowledge.
Institutions of Advice-Giving	Various committees, panels, and regulatory bodies that integrate scientific knowledge into policy-making processes.	(i) Governance Structures: Robust governance structures promoting transparency, accountability, and public participation; (ii) Inclusiveness and Representation: Processes that are inclusive and representative of diverse perspectives and expertise. (iii) Public Engagement: Meaningful public consultation and consideration of public values and concerns.

8.2.2 From Channelling Legitimacy to Avoiding Blame

Bovens defines blame avoidance as the strategies and behaviours that public officials and organisations employ to minimise their responsibility for controversial decisions or negative outcomes.[481] According to Bovens, actors in public institutions actively work to escape, diffuse, or deflect blame through various mechanisms – often by creating ambiguity around who is actually responsible for decisions. This becomes

[481] Bovens (n 337)

especially relevant in complex policy areas involving scientific expertise, where the lines between technical advice and political decision-making can be deliberately blurred.

While traditional analyses of blame avoidance often focus on how political actors avoided the procedures of accountability (or institutional mechanisms, in the Castells' framework used by this thesis), the Brazilian case demonstrates how scientific legitimation itself can be weaponised for avoiding accountability whilst maintaining influence.

Bovens' work can be complemented by Hood's[482] framework describing the main strategies of blame avoidance. While the events analysed in this Chapter often involve multiple overlapping strategies, I have organised the analysis around Hood's three main categories of blame avoidance: presentational, agency, and policy strategies. Each category illuminates different ways that scientific authority was leveraged to avoid accountability. In the following sections, I examine specific events that exemplify each of these strategies and demonstrate how they were deployed by the anti-scientific network.

Presentational strategies focus on managing perceptions and narratives to minimise blame. These strategies revolve around framing events in a way that deflects or minimises blame. For instance, an official might deflect attention from a failure by emphasising unrelated achievements or successes, diverting scrutiny. Another tactic is the use of spin, where selective information or particular framing is employed to present events in a more favourable light. Timing is also used; bad news might be released during periods of lower public attention, such as weekends or holidays, to minimise its impact. This Chapter will discuss an example of a presentation strategy: ministers framed 'Early

[482] Hood (n 334)

Treatment' Information Notes as mere 'orientations' rather than official recommendations.

Agency strategies involve delegating or dispersing responsibility across multiple actors or institutions to avoid direct blame. This can be achieved through institutional design, where decision-making is handled by committees or collective boards, making it unclear who is ultimately accountable. Delegation and contracting out are also common, where controversial or risky decisions are outsourced to external bodies, private contractors, or semi-autonomous agencies, thereby shielding the primary organisation. For example, Minister Pazuello claimed decisions were made by 'technical areas'[483] (i.e. departments) rather than by himself.

Policy strategies involve designing and implementing policies in ways that minimise blame risk. Risk-shifting is a common approach, where policies are designed to transfer risks to other parties, such as citizens, markets, or lower levels of government. Another tactic is policy complexity, where measures are made so intricate that tracing failures to a specific actor or cause becomes extremely difficult. Symbolic responses also play a role; these are highly visible but low-impact measures introduced to show that action is being taken without committing to substantial risks or responsibilities. One example here would be how the Brazilian Ministry of Health used medical autonomy as justification for recommending Early Treatment, instead of producing a formal recommendation for the drug fulfilling all bureaucratic requirements.

Interestingly, these strategies were executed taking advantage of dualities created between 'scientific knowledge' and 'politics,' 'formal' and 'informal,' which are demarcations that were reinforced by the anti-scientific network to favour itself. Political decision-makers selectively distanced themselves from scientific knowledge, in an

[483] Senado (n 481)

attempt to dissociate their 'knowledge' of science from their political 'decisions', and consequently escape legal obligations and consequences.

In the next Section 8.3, I will describe in detail the institutional functioning of the SUS and lay out the 'dramatis personae,' or the main bodies that interacted with the anti-scientific network, within the scope of this analysis. Using Jasanoff's framework, I will provide an account of how the SUS' was besieged by the anti-scientific network in an attempt to control the internal departments responsible for expertise and scientific knowledge production. Finally, in Section 8.4, I will take a closer look at specific events during the Covid handling in Brazil to analyse how the anti-scientific network was able to manipulate institutional bodies to promote 'Early Treatment' and avoid responsibility and liability.

8.3 Expertise Under Siege: The Anti-scientific Network's Attempt to Seize Control over the Technical Bodies of the SUS

8.3.1 The institutional regime of treatment evaluation and approval

Brazil's health policy operates through a hierarchical system of legal provisions that establishes specific requirements for drug approval and health technology adoption. Technology, in this context, refers to anything from new drugs, devices, to new treatments. The 1988 Constitution provides the foundational framework, establishing health as a universal right and state obligation. Article 196 defines health as 'a right of all and duty of the State, guaranteed through social and economic policies aimed at reducing the risk of illness and other hardships, and at universal and equal access to actions and services for its promotion, protection, and recovery'.[484]

[484] Constituição do Brasil (n 54)

The Organic Health Law (Law 8.080/1990)[485] operationalises these constitutional provisions through detailed regulatory requirements for health technology assessment and clinical protocols. This law establishes the SUS as the primary mechanism for delivering public healthcare, similar, for example, to the NHS in the UK. The Constitution and connected laws create specific obligations for evidence-based decision-making in health policy. The law requires technical evaluation of medical interventions and establishes procedures for incorporating new treatments into the public health system.

A significant development in this framework occurred through Law 12.401/2011,[486] which amended the Organic Health Law to create more robust procedures for health technology assessment. This amendment established the National Commission for Technology Incorporation (CONITEC) and formalised requirements for scientific evidence in health policy decisions. Article 19-Q of the Law mandates that any new medication, product, or procedure must undergo technical evaluation before incorporation into SUS protocols. This creates a specific legal obligation for evidence-based assessment before new treatments can be authorised for public health use.

During the Pandemic, Law 13.979/2020[487] supplemented this framework by establishing emergency procedures while maintaining core requirements for scientific evidence. Even under emergency conditions, the law required that health interventions be based on scientific evidence and limited in duration to the period of emergency. This

485 Brazil, Law No. 12.401 of 28 April 2011, 'Amends Law No. 8.080 of 19 September 1990 to regulate therapeutic care and incorporate health technologies within the scope of the Unified Health System (SUS)' https://www.planalto.gov.br/ccivil_03/_ato2011-2014/2011/lei/l12401.htm accessed 7 January 2025.

486 Ibid

487 Brazil, Law No. 13.979 of 6 February 2020, 'Provides for measures to address the public health emergency of international concern arising from the coronavirus (COVID-19)' https://www.planalto.gov.br/ccivil_03/_ato2019-2022/2020/lei/l13979.htm accessed 7 January 2025.

maintained the fundamental principle of evidence-based decision-making while creating mechanisms for rapid response to the health crisis.

The regulatory framework for drug approval, established through Law 6.360/1976,[488] creates specific technical requirements for medication safety and efficacy. This law empowers the National Health Surveillance Agency (ANVISA) to evaluate scientific evidence before approving new drugs or new applications for existing medications. The law establishes clear criteria in Articles 16 and 17, including: (1) proven scientific basis and clinical evidence of therapeutic efficacy; (2) demonstrated safety through toxicological studies; (3) standardised manufacturing processes meeting quality control requirements; and (4) complete technical documentation of pharmacological properties and clinical trials for both regular approval processes and emergency authorisations, creating specific technical benchmarks that must be met before medications can be prescribed within the public health system.

This legislative framework creates a hierarchy of three distinct and interrelated obligations for health policy decisions:

1. Constitutional obligation to provide universal access to healthcare based on scientific principles

2. Procedural requirements for evaluating and incorporating new health technologies (including drugs and treatments derived thereof)

3. Technical standards for drug safety and efficacy assessment

[488] Brazil, Law No. 6.360 of 23 September 1976, 'Provides for the health surveillance of medicines, drugs, pharmaceutical inputs, and related products' https://www.planalto.gov.br/ccivil_03/leis/l6360.htm accessed 7 January 2025.

These obligations remain in force during health emergencies, though procedures may be expedited. However, the 'Early Treatment' agenda deliberately relocated the obligation of the state to promote health to individual choices and drug consumption; bypassed institutional requirements which even allowed for corruption scandals not discussed in this thesis; and flexibilised standards imposed in the healthcare sector for public and private entities.

The framework also establishes clear lines of institutional responsibility and specific requirements for scientific evidence in policy decisions assigned to each department and administrative instance within the SUS. This should enact a comprehensive system of accountability for health policy decisions, particularly regarding the introduction of new treatments or modifications to existing protocols.

8.3.2 Institutional Dramatis Personae of Public Health

Brazil's health governance operates through a complex network of institutions with distinct but interconnected mandates. The relationship between these institutions reflects Brazil's attempt to balance technical expertise, professional autonomy, and political accountability in health governance. Under normal circumstances, policy decisions follow a structured path: technical evaluation by CONITEC and ANVISA, professional input from bodies like the Federal Council of Medicine (CFM), and final approval by the Ministry of Health.

The **Ministry of Health** serves as the central executive authority in health policy implementation, with powers derived from both constitutional provisions and Articles 9 and 16 of the Organic Health Law (Law 8080/90). Its policy-making authority encompasses the final approval of health technologies, including drugs, establishment of clinical protocols, and coordination of the public health system. The Ministry operates

through various secretariats, each with specific technical competencies and decision-making powers.

The **National Commission for the Incorporation of Technologies in SUS (CONITEC)** serves as the primary technical advisory body for evaluating health technologies. Established by Law 12.401/2011, CONITEC's mandate encompasses the technical assessment of new medications, procedures, and clinical protocols before their incorporation into the public health system. The commission's role is to evaluate 'scientific evidence regarding efficacy, accuracy, effectiveness, and safety' (Brazil, 2011, Art. 19-Q). It has a complementary role to ANVISA, described above, where CONITEC is mostly focused on scientific effectiveness and financial feasibility of a new treatment. CONITEC's procedures require systematic review of available evidence, public consultation, and a formal recommendation to a sub-division within the Ministry of Health, the Secretary of Science, Technology, and Strategic Inputs of the Ministry of Health.

The **Federal Council of Medicine (CFM)** operates as an autonomous federal institution established by Law 3.268/1957.[489] Its authority extends to professional regulation, ethical oversight, and the establishment of medical practice parameters. During the pandemic, this authority was particularly significant discussing (or avoiding the discussion on) the effectiveness of 'Early Treatment' and producing political positions on medical autonomy. As demonstrated by the CFM's Technical Opinion No. 4/2020,[490] which addressed the use of chloroquine and hydroxychloroquine for Covid

[489] Brazil, Law No. 3.268 of 30 September 1957, 'Regulates the practice of medicine and establishes the Federal and Regional Medical Councils' https://www.planalto.gov.br/ccivil_03/leis/l3268.htm accessed 7 January 2025.

[490] CFM (n 16)

treatment, the CFM played an important role diverting the discussion, emphasising medical autonomy while acknowledging the lack of robust scientific evidence.

The CFM maintains regulatory independence while still being part in various SUS governance mechanisms. The Council holds permanent seats on several key committees, including CONITEC, creating institutional linkages that proved significant during the pandemic response. As noted by Dourado et al.,[491] this institutional arrangement balances professional autonomy and evidence-based policy requirements.

Brazil's standard health policy development framework establishes structured pathways designed to ensure scientific rigour and public accountability. At its core is the technical evaluation conducted by CONITEC, which must assess scientific evidence for new health technologies or protocol modifications. This process requires thorough examination of efficacy, safety and cost-effectiveness data before any recommendations can be forwarded to the Ministry of Health. These requirements create clear benchmarks that must be met before policy changes can be legitimately implemented.

The process demands robust documentation and public consultation at each stage. Technical assessments must be published for stakeholder review, allowing medical professionals, researchers and civil society organisations to submit evidence and concerns. Each stage requires formal documentation, creating an audit trail that enables scrutiny of decision-making. These documents become part of the public record and must demonstrate compliance with evaluation requirements. Policy modifications cannot proceed without completing these procedural steps, even in emergency situations.

This procedural framework establishes clear benchmarks for policy legitimacy. Deviations from these procedures raise questions about policy validity and create

[491] Daniel Dourado et al. (n 233)

potential grounds for legal challenge. During the pandemic, these standard operating procedures became particularly significant as they defined the legitimate pathways for introducing new treatments or modifying existing protocols. Understanding these institutional procedures and requirements is crucial for analysing how the anti-scientific network systematically worked to undermine and capture these technical bodies. As such, the next Section examines the chronological progression of this institutional siege, as the network moved to systematically dismantle these guardrails and seize control of the SUS' technical decision-making apparatus.

8.3.3 The Progressive Capture of the SUS by the Anti-Scientific Network

The promotion of 'Early Treatment' in Brazil represented a systematic campaign to realign multiple institutions under Bolsonaro's political agenda. The chronology of events from March 2020 to early 2022 highlights Bolsonaro's multi-front strategy to institutionalise 'Early Treatment' while creating shields against legal obligations and consequences.

The campaign began in March 2020 with direct institutional interventions. On March 20, Bolsonaro issued an executive order attempting to centralize public health management, a move the Supreme Court would later strike down in April 15 as unconstitutional (ADI 6341/2020).[492] This early attempt at centralisation was coupled with specific actions to enable Early Treatment: on March 26, Bolsonaro ordered the Army Laboratory to increase chloroquine production while simultaneously demanding that ANVISA ban its exports.

[492] Brazil, Supremo Tribunal Federal (STF), ADI 6341/2020, 'Direct Action of Unconstitutionality' https://portal.stf.jus.br/processos/detalhe.asp?incidente=5880765 accessed 7 January 2025.

The strategy evolved rapidly as institutional resistance emerged. When Health Minister Luiz Henrique Mandetta opposed expanding chloroquine use beyond severe cases, Bolsonaro intensified his operations in multiple channels. While maintaining public pressure through social media – exemplified by his April 8 2020 public address[493] claiming hydroxychloroquine's efficacy – he also worked to realign institutions to obey his command. Bolsonaro engaged in a process of 'grilling' ministers who disagreed with him on social media, attacking their reputations. Mandetta found himself under intense attacks by the president and his supporters.[494] Mandetta's April 16 dismissal marked a shift from attempting to work through existing institutional structures to systematically rebuilding them around 'Early Treatment' promotion. Mandetta was followed by a brief tenure of Nelson Teich.

This early phase of the pandemic revealed how the anti-scientific network began targeting all three bodies of expertise: attempting to reshape the body of knowledge through executive orders, pressuring individual experts and politicians like Mandetta who maintained scientific positions, and interfering in institutions of advice-giving under political control.

Teich's 29-day mandate as Health Minister (April 16 - May 15, 2020) points to the tensions between maintaining scientific legitimacy while navigating political pressure for 'Early Treatment' promotion. The defining moment of Teich's mandate came through his resignation statement: 'I will not stain my history because of chloroquine.'[495]

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493 Governo do Brasil (n 364)

494 G1 N.a., "A Gente Está Se Bicando Há Algum Tempo', Diz Bolsonaro Sobre Ministro Mandetta | Política | G1' https://g1.globo.com/politica/noticia/2020/04/02/a-gente-esta-se-bicando-ha-algum-tempo-diz-bolsonaro-sobre-ministro-mandetta.ghtml accessed 7 January 2025.

495 CNN Brasil N.a., 'Saída de Nelson Teich Do Ministério Da Saúde Repercute Internacionalmente | CNN Brasil' https://www.cnnbrasil.com.br/internacional/saida-de-nelson-teich-do-ministerio-da-saude-gera-repercussao-internacional/ accessed 7 January 2025.

This declaration reveals the fundamental tension between scientific expertise and political pressure that was being put on the Ministry even from inside the government.

When questioned during the CPI about this statement, Teich elaborated that his opposition was not specifically about chloroquine but about the proper procedure for incorporating any medicine into public health protocols: 'It is a medication that has risky side effects. In fact, the problem there was that we still did not have concrete data on the benefit... essentially, it was the concern about misuse'.[496]

Teich's handling of the relationship between medical autonomy and public policy was particularly revealing. As he testified:

> In a medical prescription where you buy the medicine - although I question the technical position - this is a patient's right... When you talk about public money and how we don't have large volumes of resources compared to what we need, then I think you can't use it on things that you know don't work (Author's translation).[497]

Teich's mandate ended when the conflict between scientific expertise and political pressure became untenable. This moment is significant because later political figures would strategically invoke this same boundary between science and politics – claiming they had no technical knowledge and were merely following scientific guidance – to avoid responsibility for their decisions. The Ministry of Health was left without a Minister for a long period, and, I discuss next, the following Minister had no health of

[496] Senado Federal do Brasil, CPI da Pandemia, 'Reunião nº 9973, 2021', meeting held on 5 May 2021, dedicated to the testimony of former Health Minister Nelson Teich, https://legis.senado.leg.br/atividade/comissoes/comissao/2441/reuniao/9973 accessed 8 January 2025 (Translation by author).

[497] Ibid

medical expertise. This strategic repositioning reveals how the anti-scientific network could simultaneously override scientific expertise while using it as a shield against accountability. As Teich testified:

> That week, there was a speech by the President there at the exit of [the Presidential Residence], where he says that the Minister has to be in tune and mentions my name specifically... The day before, from what I saw, there was a meeting - I think with businessmen - where he said that the medicine would be expanded... he has [an online livestream session], where he says that he hopes that, the next day, this will happen... And then, the next day, I ask for my exoneration (Author's translation).[498]

Teich's departure marked a crucial moment in the dismantling of expertise: his statement about 'not staining my history because of chloroquine'[499] exemplifies how individual experts (the second body in Jasanoff's framework) were forced to choose between maintaining scientific credibility and political survival.

This marked the absolute siege by Bolsonaro of the Ministry of Health, which is an important body governing the SUS, but does not have full control of the public health system. While he accepted nominations of people with a medical background before, Bolsonaro chose to leave the Ministry vacant for 123[500] days and only then nominate Eduardo Pazuello. Described in detail in Chapter 6, Pazuello openly said he 'had no idea what SUS was'[501] but also had relentless loyalty to the president. Alongside

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[498] Ibid

[499] CNN Brasil N.a. (n 496)

[500] Pazuello, initially a second-rank secretary, became interim minister when Bolsonaro left the position vacant. After 123 days, Bolsonaro officially appointed him. For a summary and timeline, see BBC (n 34).

[501] Natália Andre, 'Pazuello diz que, antes de cargo no governo, não sabia o que era o SUS' (*CNN Brasil*) https://www.cnnbrasil.com.br/politica/pazuello-diz-que-antes-de-cargo-no-governo-nao-sabia-o-que-era-o-sus/ accessed 7 January 2025.

his statement about SUS, one of the many points of contention in his testimony to the CPI da Covid was a remark he made during a live broadcast with Jair Bolsonaro. When it was suggested that Brazil should cancel plans to purchase Chinese Covid vaccines, Pazuello jokingly responded: 'Gentlemen, it's simple like this: one commands, and the other obeys. But we do have affection, you see? We can work it out, we can work it out'.[502]

Pazuello's appointment, with his self-proclaimed ignorance of the SUS, represented a deliberate attack on the third body of expertise – institutions of advice-giving. By installing a leader who lacked health expertise but maintained absolute loyalty to the president, the anti-scientific network could more easily bypass institutional procedures for evaluating scientific evidence.

This institutional realignment accelerated under Pazuello's leadership. The Ministry of Health's May 20, 2020 official recommendation of chloroquine for mild cases represented a crucial transition from informal promotion to formal policy. This was reinforced through a series of institutional actions: the relaxation of prescription requirements through ANVISA's Resolution 405 (July 22, 2020),[503] the waiving of prescription requirements for certain drugs via Resolution 420 (September 2020),[504] and the development and public release of TrateCov app recommending chloroquine as

[502] Guilherme Mazui, "É simples assim: um manda e o outro obedece', diz Pazuello ao lado de Bolsonaro | Política' (*G1*, 22 October 2020) https://g1.globo.com/politica/noticia/2020/10/22/e-simples-assim-um-manda-e-o-outro-obedece-diz-pazuello-ao-lado-de-bolsonaro.ghtml accessed 7 January 2025.

[503] National Health Surveillance Agency (ANVISA), Resolution No. 405 of 29 May 2020, 'Establishes exceptional and temporary measures for the registration and regularization of health products in the context of the COVID-19 pandemic' http://antigo.anvisa.gov.br/documents/10181/5956497/%281%29RDC_405_2020_COMP.pdf/32673d71-222d-4af9-9fc6-f22c40a6e1b2 accessed 7 January 2025.

[504] National Health Surveillance Agency (ANVISA), Resolution No. 420 of 3 September 2020, 'Regulates the use of health products in the context of the COVID-19 pandemic' http://antigo.anvisa.gov.br/documents/10181/5956497/RDC_420_2020_.pdf/cdc2e814-3c61-43d1-af7a-ac7b06ccbfd6 accessed 7 January 2025.

standard protocol.[505] Under Pazuello, the Ministry passed 5 critical Recommendations, two of which are central to this Chapter's analysis:

Table 2: A list containing the main documents issued by Ministry of Health regarding Early Treatment, along with its publication date and summary of content.

Document	Publication Date	Content
Information Note 5/2020 - DAF/SCTIE/MS	March 19, 2020	Recommended the use of chloroquine as an adjuvant therapy for severe Covid-19 cases in hospitalised patients, emphasising the lack of specific treatments at the time
Information Note 6/2020 - DAF/SCTIE/MS	March 31, 2020	Updated and revoked Note 5/2020, maintaining guidance on chloroquine use for severe Covid-19 cases while incorporating new preliminary data
Unsigned document published on the MS website, with no date, later published as Information Note nº 9/2020-SE/GAB/SE/MS May 2020	May 20, 2020	Provided guidelines for early pharmacological management of Covid-19 patients, including recommendations for chloroquine and hydroxychloroquine under medical discretion
Information Note nº 11/2020-SE/GAB/SE/MS	June 15, 2020	Focused on antibody testing in municipalities with available resources and addressed protocols for clinical management and notification of Covid-19 cases
Information Note 17/2020 - DAF/SCTIE/MS	July 30, 2020	Regulated the prescription of chloroquine and hydroxychloroquine for 'Early Treatment' of COVID-19, requiring informed consent from patients and leaving decisions to medical judgment

The Ministry of Health published 'Early Treatment' protocols of ambiguous legal standing, as they did not implement policies but rather made 'recommendations' – nor did the Ministry have the competence to implement these drugs without first getting the approval of CONITEC. Meanwhile, the CFM's April 2020 position on medical

[505] Pinheiro and Garcia (n 36).

autonomy provided professional cover and CONITEC's evaluation process was systematically bypassed.

The January 2021 Manaus crisis, the worst moment of the pandemic in Brazil, epitomises how this multi-front strategy operated in practice. Even as the city faced oxygen shortages, Pazuello's ministry prioritized sending chloroquine and promoting the TrateCov app.[506] The documents produced by other bodies backed this policy, despite it being entirely ineffective to help people, leading to the most gruesome scenes of the pandemic in Brazil.[507]

It was also in Manaus that Pazuello's secretary, Mayra Pinheiro, sent an official letter to the city's Municipal Health Secretariat, explicitly reiterating the alleged efficacy of 'Early Treatment' and asserting that the failure to follow such 'guidance' was 'unacceptable.' When confronted with this document, that along with TrateCov evidenced how her Secretary and here Ministry recurred to 'Early Treatment' in an indisputable public health policy crisis, Pinheiro once again emphasised the semantic distinction between an official recommendation and a guidance (an 'information note').

> **Senator Randolfe Rodrigues**: We have a document here... There is a document here... There is a document here signed by you. I would like to confirm whether this document was indeed signed by you. It is a document from January 7, 2021, sent to the Municipal Health Department of Manaus. This document has a first paragraph, but in the second paragraph, you say: **'We take this opportunity to highlight the scientific evidence**

[506] This app launched by the Ministry of Health would collect information on the patients' symptoms and almost always prescribe the 'Early Treatment' drugs, as mentioned in Chapters 1 and 8.

[507] Manaus experienced a total healthcare system collapse, running out of oxygen, painkillers, muscle relaxants, and hospital beds. Some patients were forcibly strapped to beds to receive respirators. Due to its remote location in the Amazon, critical supplies took days to arrive (BBC N.a., *Covid-19: Brazil Hospitals "Run Out of Oxygen" for Virus Patients*, BBC, 15 January 2021) https://www.bbc.com/news/world-latin-america-55670318 accessed 7 January 2025.

regarding the role of antiviral medications as guided by the Ministry of Health, making it, therefore, unacceptable, in light of the severity of the health situation in Manaus, the failure to adopt the aforementioned guidance.' Do you confirm this document?

Dr. Mayra Pinheiro: Yes.

Rodrigues: Perfect. So, Mr. President and Mr. Rapporteur, Dr. Mayra has just **contradicted** former Minister Eduardo Pazuello, who said here in this Parliamentary Inquiry Commission last week that the ministry had not recommended the use of chloroquine and hydroxychloroquine. So, I reiterate, members of this CPI, I reiterate, Mr. President Omar Aziz and Mr. Rapporteur: Mr. Eduardo Pazuello lied in this Parliamentary Inquiry Commission...

Pinheiro: Senator, may I...

Rodrigues: ...confirmed now by Dr. Mayra.

Pinheiro: ... a clarification regarding the legal term. It is different from a recommendation. A recommendation carries greater weight, by definition. Guidance, on the other hand, is more of an instruction... (Emphasis added and Author's translation).[508]

[508] Senado (n 325)

After the crisis, Pazuello's mandate was unsustainable and he was replaced by Marcelo Queiroga. Queiroga's approach was marked by strategic ambiguity and careful manipulation of institutional procedures, particularly regarding CONITEC's evaluation of Early Treatment.

The defining characteristic of Queiroga's tenure was his positioning regarding Early Treatment, rolling out vaccines while sustaining the discourse around 'Early Treatment' and avoiding any contradiction with previous policies. His most significant institutional manoeuvre involved CONITEC. After nearly one and a half year with the Ministry of Health omitting to request a formal opinion from CONITTEC on 'Early Treatment' drugs, Queiroga finally prompted the advisory body. He requested formal evaluation in May 2021, only after the CPI da Covid was installed in 27 Abril 2021. However, this apparent return to proper procedure masked a strategy of using policy for blame avoidance. Queiroga delayed the obvious technical opinion against chloroquine and hydroxychloroquine for treating Covid, clearly ruled out by the international scientific consensus. At the same time, he pushed the responsibility of evaluating the 'Early Treatment' effectiveness backed to CONITEC, implying that up until then the measures adopted were part of normal public health policy.

Queiroga's non-commitment to procedure and his institutional manipulation became clear in how his ministry handled CONITEC's negative report. Through Technical Note 2/2022, the ministry rejected CONITEC's Recommendations against Early Treatment, relying on CFM's note on medical autonomy to maintain preferred policies as a liberty of the doctor to prescribe. Queiroga's tenure culminated in significant institutional restructuring of the treatment incorporation procedure. Though ANVISA made changes to prescription practices in Resolutions 405 and 420 of 2020, it did not go as far as to arbitrarily change the chloroquine's leaflet to include Covid without scientific backing. Through aforementioned Law 14.313/2022, CONITEC was

empowered to recommend the use of medicines within the public health system (SUS) for indications different from those approved by ANVISA (off-label use). Through this, the president displaced certain treatment recommendation competences from ANVISA to CONITEC, where the president had more influence.

Queiroga's strategic manipulation of CONITEC demonstrates how the anti-scientific network had learned to simultaneously exploit all three bodies of expertise: maintaining uncertainty in the scientific knowledge base, pressuring individual experts within institutions, and restructuring advisory bodies to serve political rather than scientific ends.

These movements reflect an increasing interference of Bolsonaro, the most central node identified in Chapter 6, in the public health politics. Distorted science, discussed in Chapter 7, was an important piece to justify his politics. However, the anti-scientific network was also particularly effective in dissipating blame for these increasingly overt interferences. This is reflected in the testimonies from the four ministers, listed in Table 3 below, who were unwilling to blame directly a powerful political figure, and paradoxically also increasingly acknowledged the president's lack of involvement with public health policy.

Table 3 summarises the positions of the ministers on each of these issues and their final takes on the president's responsibility. These three strategies – presentational, agency, and policy – worked in concert, each reinforcing the others to create a system for evading legal obligations and consequences. The network could simultaneously maintain influence over health policy while ensuring that no individual or institution could be held fully responsible for the consequences of promoting Early Treatment.

Table 3: List of Health Ministers during the Pandemic in Brazil and their positions in relation to 'Early Treatment' according to their CPI testimonies

Minister	**Early Treatment**	**Medical Autonomy**	**Position on CONITEC's Consultation**	**President's Responsibility for the Pandemic**
Luiz Henrique Mandetta	Opposed to use without robust scientific evidence.	Supported within the limits of ethics and science.	Emphasised the importance of evidence-based protocols.	Mentioned divergences and frictions with the president.
Nelson Teich	Cautious and advocated for the need for clear scientific evidence.	Recognised, but advocated for evidence-based prescriptions.	Any recommendation for hydroxychloroquine should undergo CONITEC's evaluation process to ensure its efficacy and safety.	Stated he did not receive direct orders from the president about chloroquine.
Eduardo Pazuello	Supported the idea of early medical attention, but avoided details on chloroquine.	Recognised the autonomy of doctors.	Ministry was responsible for compiling scientific evidence and referring it to CONITEC. However, he justified not submitting hydroxychloroquine to CONITEC by claiming that all guidelines published during his tenure were signed by SUS and Ministry of Health secretariats, shifting the credibility to these bodies rather than CONITEC.	Denied having faced direct pressures from the president.
Marcelo Queiroga	Acknowledged the *division* in the medical community and emphasised the need for scientific consensus, but did not strike down 'Early Treatment' notes.	Supported, but stressed that decisions should be based on scientific evidence.	Claimed to have promptly forwarded the clinical protocol to CONITEC for assessment and could only comment on the matter once CONITEC had completed its analysis. He was accused of using this as a delaying tactic, as the final opinion of CONITEC was not necessary to revoke scientifically unsupported guidelines.	Stated he did not receive direct orders from the president to promote chloroquine

8.4 Analysis of Political Strategies to Exploit Expertise and Avoid Blame

The political nodes of the anti-scientific network engaged in boundary work in the opposite direction of the scientists discussed in Chapter 7. Politicians sought to

outsource knowledge to scientists and with that diffuse responsibility for connected political decisions, while scientists sought to outsource political decisions to politicians. This process was aided by concurrently blurring the lines of formal public authority and informal individual opinions, a separation which these nodes strategically invoke and blur.

This Section will discuss the overall policy and position orchestrated by the Ministry of Health (8.4.1) in the context of an increasing grip by the anti-scientific agenda. I will then dedicate subsequent subsections to each of the main events studied in this Chapter: the production of Information Notes 9 and 17, the most relevant moments of expansion of 'Early Treatment' drugs by the Ministry of Health (8.4.2); the bypassing of and interference in CONITEC (8.4.3); and the coordination with CFM in the reframing of the issue of drug effectiveness to one of medical autonomy (8.4.4).

Political actors systematically constructed boundaries between technical or scientific expertise and political accountability through three primary mechanisms, and with them operated blame avoidance strategies described by Hood.[509] These included: the separation of formal and informal spheres (presentational strategy), the management of scientific uncertainty (policy strategy), and tampering with critical institutional procedures (agency strategy).

8.4.1 The Creation of Institutional Gaps of Accountability within the Ministry of Health

As the anti-scientific network increased its direct influence over the SUS, it created a space of informality to promote 'Early Treatment' with the authority of the Ministry of Health institution but without its formal accountability and responsibility

[509] Hood (n 334)

constraints. For example, in Mayra Pinheiro's testimony, when questioned about presidential actions contradicting scientific guidance, she described her appointed role in the Ministry as a *strictly* technical role. As such, she justified refusing to comment on the president's actions and policies, even though she was a high ranking policymaker of the national public health strategy with exactly the mandate of determining what the best course of public action would be. When pressed further about public health implications, she reinforced this boundary: 'That is [the president's] *opinion*, Senator. I came here to report facts and speak about my technical conduct'.[510]

Osmar Terra's testimony operated creating similar boundaries. Terra was mainly a congressman, but he was a physician by training. He used his social media account to comment widely on issues related to the pandemic. Placing his multiple roles at service of the anti-scientific network, he was a politician who supported Bolsonaro, participated in the Parallel Cabinet, but was not officially a member of the government. His views were similar to Bolsonaro's agenda for the pandemic.

Similar to Mayra Pinheiro, Terra framed his publications and statements as mere **opinions**, despite his direct capacity to influence the government's policies. When questioned about his connections to other actors, Terra carefully reframed institutional relationships as informal exchanges. This characterisation of policy discussions as mere opinion served to distance influential actors from the responsibilities and procedures assigned to formal decision-making processes:

> There is no secret agreement, committee, or anything like that, Senator. It could even have existed. The President could have created it, but he didn't; it doesn't exist. These are sporadic

[510] Senado (n 325)

> opinions and conversations that he can accept or not, it's up to him (Author's translation).[511]

These are examples of a broader *modus operandi*. The anti-scientific network blurred the line that separates official and unofficial channels of communication, but they appealed to the distinction when it was useful. In this regard, the use of social media was strategic for producing public statements that could be easily erased of frame as 'opinions' when legal consequences arose. The network's approach to social media revealed broader patterns of strategic ambiguity. When questioned about deleted Ministry posts following presidential statements, Pazuello argued that he did not even control his Ministry's channels – suggesting that social media communication, the office, and his role had no connection. The deliberate distancing from communication channels, despite their institutional nature, created accountability gaps between public messaging and policy decisions.

When confronted about Ministry of Health communications during the CPI da Covid, Pazuello established a clear divide between institutional authority and communication channels, effectively excluding from his responsibility something was under the purview of his mandate:

> **Eduardo Pazuello (Deponent)** - The administration of Twitter is handled by my communications team, the second level of communication. I have never managed Twitter.

[511] Ibid

> **Randolfe Rodrigues (Senator interrogating)** - Didn't it catch your attention that it was deleted?
>
> **Pazuello** - Look, I'll tell you something: I don't even have Twitter, I don't look at Twitter, I don't use any of that.
>
> **Rodrigues**- But it's not you who has it; it's the Ministry of Health.
>
> **Pazuello** - That's what I'm saying. I didn't... Sorry, I didn't follow the Twitter account, and I wasn't the one who gave the order to remove it. If it was removed, it was due to the updating process itself.
>
> **Rodrigues** - So, it was a mere coincidence that it was removed right after the President disavowed it? (Author's translation).[512]

When questioned about the alleged decision to halt vaccine purchases, Pazuello constructed a distinction: 'Nothing was formalised, and nothing was halted in the Ministry. There was never an order. **That was merely a political agent's position on the internet**' (Emphasis added). This characterisation created an artificial boundary between institutional actions and public communications, despite both originating from the same official, and issued from accounts that appeared to represent the person's official capacity.

[512] Senado (n 481)



Image 14: Tweets from the Ministry of Health quoting Minister Pazuello: 'We need to intensify Early Treatment.'[513]

This rhetoric demarcated artificial boundaries in institutional action. It created what I term here 'spaces of informality,' which are instances where the state apparatus is effectively employed for a given purpose, however it escapes accountability because it did not fulfil the formal mandates and procedures. This strategy transformed what would normally be invalid governmental actions into actions that, while technically improper, became difficult to challenge. The anti-scientific network achieved this through multiple tactics: deliberately creating ambiguous official documents, issuing influential statements under the guise of 'personal opinions,' and implementing government initiatives that could be quickly withdrawn or downplayed if challenged. These can be analysed under Hood's framework mentioned before.

[513] Ministério da Saúde [@minsaude], "'We need to intensify early treatment, care, diagnosis, and medical prescription. All these actions aim for the patient's recovery. No one should stay at home when feeling unwell; they should seek a doctor immediately", reinforced Pazuello.' 23 July 2020 https://x.com/minsaude/status/1286354987342331907 accessed 7 January 2025.

When concatenated with the strategies of creating uncertainty (policy), of circumventing institutional procedures (agency), and reframing accountability and responsibility (presentational), discussed in the next subsections, a complex web of deniability was created. Actors could point to something to evade responsibility. Yet, the anti-scientific discourse was upheld, unquestioned, and widely disseminated, this maintained influence over policy outcomes and promoted adoption of 'Early Treatment' with a symbolic authority of institutional backing. *Symbolic*, because in practice the anti-scientific network could claim that no governmental policies were ever rolled out. For example, as Bolsonaro accused the Supreme Court of preventing the Federal Government from spearheading and controlling the SUS at all national levels;[514] or even because the institutional procedures that characterise policy were never triggered. The next three subsections will analyse the main strategies that enabled the creation of these accountability gaps.

8.4.2 Presentational Strategy: Ministry Information Notes 9 and 17

The manipulation of scientific uncertainty was used by the experts of the anti-scientific network but it was extended and exploited in institutional documentation by politicians. The Health Ministry's Information Notes 9 and 17 demonstrate how uncertainty could be simultaneously acknowledged and bypassed. These documents expanded hydroxychloroquine usage to mild and early-stage cases while maintaining strategic ambiguity about their official status, since they were never approved by a

[514] UOL N.a., 'Bolsonaro Mente Ao Dizer Que STF o Proibiu de Ação Contra Covid-19' https://noticias.uol.com.br/politica/ultimas-noticias/2021/01/15/bolsonaro-diz-que-stf-proibiu-qualquer-acao-contra-pandemia.htm accessed 7 January 2025.

competent body. This approach enabled the promotion of unproven treatments while preserving deniability about policy implications.

The Ministry of Health had no competence of single-handedly establish the adoption of a new treatment in public health. As such, the documents were invalid and formal adoptions of new treatments. However, the documents were published and widely disseminated, and also created a document that healthcare providers could point to as an apparently solid orientation to prescribe 'Early Treatment' drugs.

Therefore, theses strategic documentation practices used the state apparatus to reinforce the 'Early Treatment' discourse, signalling the population should use these drugs. It also added a layer of protection for those who chose to adhere to the policy, prescribing the medication, as they could always fall back on the government document to justify their conduct. Information Notes 9 and 17 were deliberately presented as *advisory* rather than prescriptive, creating ambiguity about their official status while maintaining institutional authority to promote specific treatments.

Information Note 9, published in July 2020, established a clinical protocol for 'Early Treatment' in mild and moderate Covid cases. The document prescribed specific dosages of hydroxychloroquine and azithromycin from the first day of symptoms, including recommendations for adults, children, and pregnant women. Pazuello's testimony regarding Note 9 demonstrates this strategic ambiguity, framing it almost as a moral obligation to offer advice and inform the people:

> We felt **obligated to issue a national advisory note**, alerting that there was no scientific evidence […] We aligned with the Federal Council of Medicine and made it clear that the doctor

> would be sovereign in prescribing any medication (Emphasis added and Author's translation).[515]

The progression of Information Notes shows systematic expansion of 'Early Treatment' Recommendations. From initial authorisation for severe cases in Information Note 5/2020, through to expanded usage for mild cases in Note 9, and finally consolidated Recommendations in Note 17, the Ministry systematically broadened the scope of Early Treatment. Their classification as 'guidance' promoted the aforementioned accountability gaps.

Seemingly contradictory to Pazuello, when questioned about the notes' authority, Mayra Pinheiro characterised them as creating a 'judicially perfect document'.[516] The notes referenced scientific studies and professional authority, relying on multiple sources of legitimacy set out by the selected 'experts' of the anti-scientific network, many of which were discussed in Section 3 to 5 of Chapter 7.

The notes received strategic institutional support through multiple channels. The Ministry leveraged the Federal Council of Medicine's position on medical autonomy to justify their distribution, while simultaneously citing technical expertise within the Ministry's secretariats. As Pazuello stated, all new guidelines published during his tenure were signed by all SUS and Ministry of Health secretariats, an agency strategy to disperse blame. This allowed him to create a shared responsibility over the note – to the point no single person was *fully* accountable.

While technically advisory, their institutional origin created implicit pressure for implementation, and lent authority to this solution. The notes provided detailed dosage

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[515] Senado (n 325)

[516] Likely meant that the measure was legally valid, fulfilling all legal requirements and falling within the Ministry's competence, he probably mistook the term 'jurídico' (legal) with 'judicial' (pertaining to judges).

Recommendations and treatment protocols, effectively pressuring for a standard practice. Certain healthcare providers involved in the anti-scientific network, issued overarching policies pressuring doctors to prescribe these drugs, these included hospital and health insurance providers.[517] Some of them mailed 'Early Treatment' drugs *en masse* to all of their clients.[518]

The impact of the Ministry's Information Notes on medical practice was substantial. This circumvention of normal evaluation procedures was particularly evident in how the notes progressively expanded treatment Recommendations. As documented in the CPI investigation, Information Note 17 consolidated recommendations for hydroxychloroquine usage across multiple patient groups, including children and pregnant women, despite lack of supporting evidence.

Health law specialists from USP's School of Public Health, Prof. Fernando Aith and Dr. Daniel Dourado,[519] analysed how the approach escaped current practice:

> The adoption of a clinical protocol without scientific evidence equally contradicts the [Brazilian] Organic Health Law. Any recommendation for the use and dosage of chloroquine and hydroxychloroquine – without a scientific basis, as there is no established dose for treating Covid-19 – signifies the creation of a clinical protocol and therapeutic guideline without adhering to the procedure prescribed by law, which falls under the Ministry of Health's jurisdiction and requires the advisory input of

[517] Vinicius Lemos, "'Nos dispensaram por não prescrever cloroquina contra a Covid-19": médicos acusam operadora de saúde' *BBC News Brasil* https://www.bbc.com/portuguese/geral-53715127 accessed 7 January 2025.

[518] UOL N.a. (n 515)

[519] Boletim n. 08, Direitos na Pandemia: Mapeamento e Análise das Normas Jurídicas de Resposta à COVID-19 no Brasil (Conectas and Centro de Estudos e Pesquisas em Direito Sanitário, 5 November 2020) https://cepedisa.fsp.usp.br/wp-content/uploads/2023/02/08boletimcovid1.pdf accessed 7 January 2025..

> CONITEC, considering the scientific evidence regarding the medication's efficacy, accuracy, effectiveness, and safety, as outlined in Article 19-Q of the aforementioned Organic Health Law. Furthermore, the so-called 'new quarantine law,' in its Article 3, Paragraph 1, also establishes that any measures, including the compulsory implementation of specific treatments, can only be adopted based on scientific evidence (Author's translation).[520]

The transformation of accountability mechanisms proved particularly effective. The notes are a central piece of a complex web of deniability. As such, even under Queiroga's mandate, the Ministry continued to resist changing these Recommendations. This resistance was further reinforced by the systematic bypassing of CONITEC, the institution legally mandated to evaluate new treatments, demonstrating how the anti-scientific network not only created informal spaces for promoting 'Early Treatment' but also actively prevented formal evaluation of these drugs.

8.4.3 Agency Strategy: Institutional Capture of CONITEC

The circumvention of CONITEC through strategic inaction exploited scientific uncertainty, by preventing formal assessment while allowing the promotion of treatments through other channels. CONITEC's mandate, established through Law

[520] Daniel A. Dourado e Fernando Aith, 'Liberação da cloroquina para Covid-19 pelo Ministério da Saúde é arriscada e ilegal' (*Folha de S.Paulo*, 24 April 2020) https://www1.folha.uol.com.br/equilibrioesaude/2020/04/liberacao-da-cloroquina-para-Covid-19-pelo-ministerio-da-saude-e-arriscada-e-ilegal.shtml accessed 7 January 2025.

12.401/2011, designates it as the primary technical advisory body for evaluating health technologies within SUS. The Law explicitly requires that:

> [T]he incorporation, exclusion, or alteration by SUS of new medicines, products, and procedures, as well as the establishment or alteration of clinical protocols or therapeutic guidelines, are responsibilities of the Ministry of Health, assisted by the National Commission for the Incorporation of Technologies in SUS (Author's translation).[521]

The extent of manipulation became evident through Elton Chaves' testimony regarding CONITEC's role. Chaves was interrogated as a representative from CONITEC, a body on which he was part because he hold a position as Representative of the National Council of Municipal Health Secretariats (Conasems). When questioned during the CPI, Chaves revealed that CONITEC had never been officially prompted to give its opinion on the matter, not before the Ministry of Health (under Queiroga) request in May 2021. This revelation prompted strong reactions from senators, Senator Omar Aziz, who questioned the passivity of the institution given widespread public debate about 'Early Treatment' protocols.

When questioned about 'Early Treatment' protocols and the omission of formally asking for CONITEC's evaluation, Pazuello claimed to be only '*compiling*' scientific evidence. As Aith and Dourado describe, the institutional procedures and guardrails are very clearly defined:

> [O]bserving the procedure provided by law, which requires the consultation of National Commission for the Incorporation of Technologies in the Universal National Health System

[521] Brazil, Law No. 12.401 (n 486)

> (CONITEC), considering the scientific evidence on the effectiveness, accuracy, efficiency, and safety of the medication (Law 8,080/1990, art. 19-Q (Author's translation).[522]

It is important to note here the importance of institutional guardrails, independence, and mandates. ANVISA is an extremely important agency within the SUS with a regulatory competence to approve, monitor, and regulate the production, commercialisation, and distribution of medicines, including vaccines. While ANVISA focuses on the **safety, efficacy, and quality** of drugs, treatments, and medical devices, CONITEC focuses on the **clinical effectiveness, economic impact, and feasibility *of incorporating treatments or drugs into SUS***. In other words, ANVISA looks at treatments in isolation, while CONITEC evaluates their incorporation into the public health system, being a body that reflects on the complexities of public health policy.

Members of ANVISA were appointed by and initially sought to support Bolsonaro, but swung away from Bolsonaro when the pandemic worsened and the president's position became less sustainable from a scientific point of view. Given the fixed-term mandate of ANVISA, Bolsonaro shifted his focus to CONITEC. CONITEC is chaired by the Ministry of Health and the Ministry can legally appoint or influence the selection of some members of seats of the board, which are legally assigned to specific organisations.

[522] Dourado et al. (n 521)

Table 4: Comparison of the institutional independence of CONITEC and ANVISA.

Aspect	**ANVISA**	**CONITEC (at the time)**
Primary Governing Law	Law No. 9,782/1999	Law No. 12,401/2011
Mandates of members	Fixed-term (3 years, renewable once)	Nominated by certain administrative bodies at any time
Approval Process of members	Presidential appointment + Senate approval	No approval; institutional designation
Autonomy	High (autonomous regulatory agency)	Moderate (advisory body under Ministry of Health)

Under Minister Queiroga and Pazuello, a deliberate delay tactic was executed. The Ministry of Health delayed prompting CONITEC for a technical evaluation of Early Treatment. When questioned about his position, the Ministry under Queiroga responded they would not issue a position on 'Early Treatment' drugs as that was the competence of CONITEC.[523] By claiming to await evaluation while maintaining existing (invalid) 'Early Treatment' Information Notes, the Ministry facilitated the promotion of 'Early Treatment' drugs to continue based on a fabricated uncertainty.

In the absence of explicit scientific evidence or CONITEC support for Early Treatment, the anti-scientific network shifted the basis of the Recommendation to the idea of the 'doctor-patient' relationship and off-label use of medications. This tied in well with the political framing the anti-scientific network uses, as described in Chapter 6, of alleging 'freedom' for individuals to seek out their own solutions. It also reinforced the importance of the medical authority, reiterated by the scientific and medical parts of this network upon the terms described in Chapter 7.

[523] Senado Federal do Brasil, CPI da Pandemia, 'Reunião nº 9975, 2021', meeting held on 6 May 2021, dedicated to the testimony of Minister of Health Marcelo Antônio Cartaxo Queiroga Lopes, https://legis.senado.leg.br/atividade/comissoes/comissao/2441/reuniao/9975 accessed 8 January 2025 (Translation by author).

As the pressure from the president and anti-scientific network intensified, the manipulation of CONITEC's role evolved beyond simple bypassing to include active resistance to technical recommendations and institutional restructuring. Contrary to Minister Queiroga's statements on the need to hear CONITEC's opinion, after the CPI da Covid, the Secretary of Science, Technology, and Strategic Inputs of the Ministry of Health explicitly rejected CONITEC's opinions through Technical Note No. 2/2022. This note presented argumentation to justify disregarding technical evaluation, particularly regarding off-label drug usage for Covid. The technical note's justification exemplifies how professional autonomy was leveraged to circumvent institutional oversight:

> A recommendation from CONITEC, whether favourable or contrary to a specific diagnostic or therapeutic approach, **should not disrespect the context of the doctor-patient relationship,** nor should it be used for undue health-related litigation, elements beyond the purposes of this advisory commission. To validate any technology by CONITEC, two requirements are essential: having approval for commercialization in Brazil given by the National Health Surveillance Agency (ANVISA) and not being considered experimental by the Federal Council of Medicine (CFM). A recommendation against a particular therapeutic option, once embraced by SCTIE/MS, for instance, attests that the SUS cannot, at that moment, incorporate and dispense that therapeutic formulation for free. **The very structure of science is mutable and evolutionary, and, facing a potentially lethal, acute, and still poorly understood disease in many of its details, it is risky to assert certainties that science itself does not support and does not intend to encompass,**

> **just as it is risky to suppress scientific debate under any pretext**. The debate must be open, protected against possible suppressions, and continuous, promoted in an environment where hypotheses can always be verified (Emphasis added and Author's translation).[524]

This argument strategically positioned medical autonomy against institutional evaluation, creating space for continued 'Early Treatment' promotion despite medical scientific opposition. The use of CFM and the reframing of drug adoption as a clinical matter will be analysed in the next subsection.

Effectively, through CONITEC and the support of CFM, the anti-scientific network impaired the drug approval and adoption process. It created circular accountability (or lack thereof), where one agency could point to the other for responsibility and vice versa. This strategy created an institutional gap to promote defy technical documents against 'Early Treatment' drugs.

In fact, even after the CPI, the manipulation extended to redefining institutional authority through legal changes. In March 2022, Law 14.313[525] modified CONITEC's mandate, carving new pathways for drug approval that bypassed previous requirements.

The note particularly emphasised off-label usage to justify maintaining 'Early Treatment' protocols. In another part of his statement, Angotti's argument referenced existing off-label uses in clinical protocols to normalise 'Early Treatment' prescriptions,

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[524] Helio Angotti Neto, Technical Note nº 2/2022, Grounds and Decision regarding therapeutical guidelines for pharmacological treatment of Covid-19 (hospital and ambulatory), Secretary of Science, Technology, and Strategic Inputs of the Ministry of Health, https://static.poder360.com.br/2022/01/Nota_tecnica_n2_2022_SCTIE-MS-3.pdf Accesed 1 February 2024

[525] Brazil, Law No. 14.313 of 9 March 2022, 'Establishes measures to combat the effects of the COVID-19 pandemic on the economy, with a focus on health and social protection' https://www.planalto.gov.br/ccivil_03/leis/2022/l14313.htm accessed 7 January 2025.

despite lack of supporting evidence. Interestingly, the notion of 'reality' is again used to undermine institutional procedures, suggesting that rules should be flexibilised or submissive to a practice that occurs informally:

> However, medications with sanitary registration and dispensation **outside the label constitute one of the realities present in the SUS** (Emphasis added and Author's translation).[526]

Most importantly, Angotti's argument fundamentally misrepresents the relationship between individual medical practice and public health policy. While off-label prescriptions are indeed common in medical practice – where individual doctors may prescribe approved drugs for unapproved uses based on their clinical judgment – this is entirely different from the systematic incorporation of treatments into public health protocols. The latter requires robust evidence of population-level safety and effectiveness, careful evaluation of costs and benefits, and formal assessment of implementation feasibility. By conflating these distinct domains, Angotti inverted the logic of Public Reason: rather than requiring scientific evidence to justify public health measures, he used the existence of individual clinical practices to bypass institutional requirements for evidence-based policymaking. This manipulation effectively transformed an exception meant for individual medical judgment into a justification for widespread, systematic promotion of unproven treatments.

The Ministry's justification for rejecting CONITEC's opinions deliberately exploited the same narrative of scientific uncertainty promoted by members of the anti-

[526] Helio Angotti Neto, Technical Note nº 3/2022, Grounds and Decision regarding therapeutical guidelines for pharmacological treatment of Covid-19 (hospital and ambulatory), Secretary of Science, Technology, and Strategic Inputs of the Ministry of Health, https://www.gov.br/conitec/pt-br/midias/audiencias_publicas/nota_tecnica_n3_2022_sctie-ms.pdf Accessed 7 January 2025.

scientific network discussed in Chapter 6. Technical Note No. 2/2022, mentioned in the previous pages, exemplified this strategy when it argued that 'the debate must be open, protected against possible suppressions, and continuous, promoted in an environment where hypotheses can always be verified'. By emphasising ongoing scientific debate and the need for continuous verification, the Ministry recycled the same rhetorical devices used by scientists like Yamaguchi and Zanotto to maintain uncertainty about Early Treatment's effectiveness.

Next, I will discuss the role of the CFM in sustaining the idea of medical autonomy in the doctor-patient relationship as a scapegoat for evading drug approval procedures.

8.4.4 Policy Strategy: CFM and Medical Autonomy in the Doctor-Patient Relationship

The CFM holds significant influence over medical practice and health policy implementation. It is an independent federal institution established by Law 3.268/1957, which shields it from direct political influence from the government, since it's directors are elected internally by the professional class.

The CFM's position was particularly significant given its institutional role within SUS governance structures. With permanent seats on key committees, including CONITEC, the Council's stance on medical autonomy carried substantial weight in policy discussions. The CFM's position understood that the pandemic justified the departure from normal evidence requirements, effectively creating blanket protection from medical malpractice claims under the notion of crisis response.

The manipulation of professional authority manifested through redefinition of **medical autonomy**. As documented in the CPI testimonies, the CFM's position was repeatedly invoked to indirectly authorise 'Early Treatment' promotion. Pazuello's testimony demonstrates this strategic use:

> We aligned with the Federal Council of Medicine and made it clear that the doctor would be sovereign in prescribing any medication and that it was public and notorious that hydroxychloroquine was being used off-label in Brazil and worldwide, and if the doctor wished to prescribe it, in agreement with the patient, he should be aware of safe doses, and not use it in the inflammatory phase, because it was not the ideal phase to use it. It should not be used in the inflammatory phase (Author's translation).[527]

This interpretation of medical autonomy created institutional protection for both individual prescribing decisions and broader policy promotion. It is worth noting that the Ministry of Health does go into details of the diagnostics and prescription phase. This reminds us that effectively the ministry – as captured by anti-scientific network – was pushing for 'Early Treatment' within the space of informality.

The CFM's stance created a parallel legitimation pathway for 'Early Treatment' and the network's discourse. Rather than requiring robust scientific evidence, obtaining approval form ANVISA and CONITEC, treatments could be justified through appeal to professional autonomy. This mechanism proved particularly effective as it shielded both prescribing physicians and policy makers from accountability.

[527] Senado (n 481)

In fact, this issue circles back to the strategy deployed by the Ministry of Health in aforementioned Notes 9 and 17 (Section 8.4.2). The enforcement of 'medical autonomy' extended beyond individual clinical decisions to shape broader policy justifications, even to counteract the SUS' procedures for reviewing drug use. Technical Note No. 2/2022-SCTIE/MS, rejecting CONITEC's advice against 'Early Treatment' drugs, demonstrates how the CFM's position was leveraged to resist scientific consensus. The note explicitly prioritised the 'doctor-patient relationship' over scientific evidence, using professional autonomy to justify maintaining 'Early Treatment' protocols despite growing evidence against their efficacy.

> A recommendation from CONITEC, whether favourable or contrary to a specific diagnostic or therapeutic approach, **should not disrespect the context of the doctor-patient relationship,** nor should it be used for undue health-related litigation, elements beyond the purposes of this advisory commission (Author's translation).[528]

The Federal Council of Medicine's Technical Opinion No. 4/2020, released in 2020 early in the pandemic, was critical to build this policy strategy. It shows how professional bodies and advice giving bodies, an important body in Jasanoff's framework of expertise, mobilised to support the 'Early Treatment' agenda. Their positioning, politically motivated, produced 'expert' documents that lent authority to all of the tactics above and supported circular deniability between scientists and politicians.

While acknowledging in the note that 'there are no high-quality clinical studies to date that prove their effectiveness' the CFM used pandemic uncertainty and urgency to

[528] Angotti Neto (n 527)

justify expanded prescription as a component of medical autonomy. A critical excerpt from the Technical Note:

> d) The principle that must necessarily guide the treatment of a Covid-19 patient should be based on the **autonomy of the physician and the appreciation of the physician-patient relationship**, which should be as close as possible, with the goal of providing the patient with the best medical treatment available at the time.
>
> e) Given the exceptional nature of the situation and during the declared pandemic period, a physician who uses chloroquine or hydroxychloroquine under the conditions outlined above in treating Covid-19 patients will not be committing an ethical violation (Emphasis added and Author's translation).[529]

The shift to focus on professional discretion created immunity from accountability for both prescribing physicians and policy makers. First, it characterised the pandemic as an exceptional circumstance where normal evidence standards could be relaxed. Second, it elevated individual clinical judgment above population-level evidence. Third, it created blanket and excessive protection from professional sanctions for physicians prescribing Early Treatment, effectively nullifying standard accountability mechanisms for medical practice

The CFM bridged the clinical framing of the pandemic (as opposed to a public health issue, described in Chapter 7) and the political world. This had a recursive and reciprocal effect with the other strategies mentioned in this Chapter, where the scientific

[529] CFM (n 16)

network concurrently produced documents and mobilised institutions it could influence. Meanwhile, the focus on the patient also enrolled individuals. People began to demand these treatments from the doctors, based on orientations from the Ministry of Health and Bolsonaro's public instructions orienting people to change doctors when they were denied 'Early Treatment' drugs by their physicians.[530] These were important elements for the anti-scientific network to, with impunity, enrol the broader population.

The institutional effect extended to how health technology assessment operated within SUS. By elevating medical autonomy above evidence requirements, the CFM's position undermined normal accountability mechanisms for treatment protocols. The Technical Opinion No. 4/2020 created a framework where individual clinical judgment could override population-level scientific evidence, fundamentally altering the relationship between scientific evidence and medical practice. This immunity operated even as international scientific consensus developed against these treatments. The CFM's position created multiple layers of deniability: physicians could claim professional autonomy, policy makers could cite respect for medical judgment, and institutions could reference professional authority.

8.5 Conclusion

By understanding expertise through Jasanoff's framework, this Chapter discusses how the network created a system of deniability that operated at multiple levels: selectively adhered to scientific recommendation, diffused accountability of individual experts, and carved informality for arbitrary use of institutional capacities. I term this web of evasion I term distributed irresponsibility.

[530] Folha de SP (n 263)

The examination of three key cases reveals the specific mechanisms through which this manipulation occurred. The Ministry of Health's Information Notes show how official documents could be crafted to generate ambiguity on scientific evidence and policies. This was a manipulation of the first body of expertise – scientific knowledge – allowed the network to promote 'Early Treatment' while creating barriers to accountability.

The Federal Council of Medicine's strategic redefinition of medical autonomy shows how the second body of expertise – individual experts – could be mobilised to create institutional protection for Early Treatment. By reframing professional autonomy, the CFM's position created immunity for both individual prescribing decisions and broader policy choices, effectively short-circuiting established procedures for evidence-based policymaking.

The systematic bypassing of CONITEC demonstrates how the third body of expertise –institutions of advice-giving – could be neutralised through strategic inaction and procedural manipulation. This case reveals how institutional authority could be undermined while maintaining the appearance of proper process, effectively creating accountability gaps in the formal evaluation system.

These approaches were particularly effective because they operated at multiple levels simultaneously and created a web of legal liability, where members of the anti-scientific network could plausibly deny of evade responsibility for their promotion of Early Treatment. At the presentational level, scientific uncertainty could be emphasised or minimised as needed. At the agency level, boundaries between political and technical authority could be strategically redrawn, so that individuals could claim they neither had the knowledge or the power to produce health policy. At the policy level, institutional

procedures could be manipulated to create undefinition around drug adoption, enabling widespread promotion of the 'Early Treatment' drugs to continue.

These presentational, agency, and policy strategies feed into a complex web of blame avoidance in science-based policy making. It operates through the appearance of scientific authority, maintains influence, but deflects accountability – all taking advantage of institutional complexity[531] to produce these spaces of informality and accountability gaps. Network members could reference technical evidence, professional autonomy, and institutional procedures in circular fashion, creating circular liability where responsibility remained in motion.[532]

In this process, the anti-scientific network strategically drew boundaries between multiple domains: between formal and informal communications, between scientific knowledge and political decision-making, and between individual medical practice and public health policy. The effectiveness of these strategies stemmed from this selective manipulation of boundaries – network members could invoke scientific authority when needed while maintaining plausible deniability about their role in promoting unproven treatments.

As Bovens argues,[533] traditional accountability mechanisms struggle to engage with situations where authority and responsibility are deliberately separated. Ultimately, complexities of modern governance, particularly regarding the role of scientific expertise in policy making and weaponizing institutions to manipulate public reason.

[531] Bovens (n 337)

[532] Hood (n 334)

[533] Bovens (n 337)

Chapter 9

Networking the State: CPI da Covid as Institutional Adaptation

9.1 Introduction

As previous chapters have shown, the anti-scientific network challenged public health institutions largely by leveraging digital communications to foster policy solutions to Covid outside of the SUS' organisational structure. This Chapter examines how the CPI strategically countered these tactics by adopting similar networked practices—not merely to investigate these challenges, but to transform how democratic institutions operate in the network society. For instance, as anti-scientific actors used social media to spread misinformation about chloroquine, the CPI responded by mobilising a supporting digital network to compile and verify contradictory evidence in real-time. This was a reaction to the anti-scientific networks' mobilisation, effectively turning the network's tools against itself. This Chapter focuses on the fourth and last sub-research question:

> How did the CPI's proceedings and investigations leverage social media's spontaneous engagement in order to counter the anti-scientific network's communication power?

While much literature has focused on how digital networks challenge or undermine the state, the CPI demonstrates how institutions can strategically adopt network practices to enhance rather than diminish their authority. Through its innovative integration of social media engagement, crowd-sourced investigation, and real-time public participation, the CPI transformed conventional parliamentary oversight into a hybrid form of democratic accountability. However, this adaptation also reveals fundamental tensions between institutional authority and network dynamics. By examining how the CPI navigated these challenges, this Chapter contributes to our understanding of how democratic institutions might preserve their essential functions while evolving to meet the demands of networked society.

The CPI da Covid as a 'Networked State'

The CPI's 'traditional' form of parliamentary investigation, following established protocols, such as senators individually interrogating deponents, was leveraged by the participation of broader society in real time. This expanded and networked form of investigative institution reflects what Castells identifies as the emergence of the 'networked state'.[534] Rather than maintaining institutional isolation, the Commission cultivated channels with digital networks. Opposition senators established direct communication channels with social media users who provided research support and evidence compilation. Anonymous Twitter accounts like @tesoureiros and @jairmearrependi became crucial allies in the investigation, helping senators navigate the vast ocean of social media evidence.

[534] Castells (n 52)

The CPI's adoption of networked practices fundamentally transformed both evidence gathering and public engagement. Testimony sessions evolved into hybrid media events as live streams enabled two-way immediate public participation in what were traditionally only broadcasted proceedings. Senators began actively acknowledging and responding to social media feedback, dissolving the traditional boundaries between institutional authority and public discourse.

This Chapter examines these developments in four sections. Section 9.2 analyses how the CPI adapted to media politics, particularly through its transformation into a form of political reality show that generated unprecedented public engagement. Section 9.3 investigates how mass self-communication enabled real-time feedback between citizens and senators, creating new forms of networked investigation. Section 9.4 concludes by examining how these adaptations reflect broader transformations into a hybrid 'networked state,' marked by the joint action of network and state, with new arrangements to sustain the state's power and institutional legitimacy, while also considering the challenges and limitations of these new forms of democratic oversight.

9.2 From Media Politics to Meme Politics: The CPI's Media Transformation

Castells conceptualises 'Media Politics' as the process through which political actors and institutions adapt their practices to media logic, focused on incentives of visibility and audience engagement.[535] This phenomenon manifests through strategic communication choices, event timing, and message framing designed specifically for

[535] Ibid

media consumption and distribution. Political actors increasingly structure their activities around media routines and requirements, demonstrating the extent to which media considerations shape political behaviour and decision-making processes. In this deep structural transformation, media institutions, technologies, and practices become integral to political processes. Visibility and political power become inextricably connected.

The concept of media politics extends beyond simple media influence and helps us examine how political institutions internalise media logic in their operations. While Castells also discusses the growing power and independence of media companies,[536] here I will focus on the growing adoption of media logic by political actors, and the transformation of political practices to accommodate media requirements.

Throughout the Chapter, I examine how the discourse produced by political actors is adapted to social media formats, pushed by a society that engages with politics on social media using its own language and format. This means that politics becomes increasingly reactive to the prevalence of immediate reaction and commentary in political communication, and the increasing importance of visual and emotional elements in political messaging.

Crucially, this process fundamentally transforms political practice in three interconnected ways discussed by Castells[537] and which we can use to discuss the institutional adaptations provoked by the CPI. First, it drives the extreme simplification of political messages, ultimately condensing complex policy debates into shareable images and memes. For example, when former Health Minister Pazuello testified about vaccine procurement delays, a picture of him fumbling at length with his mask was immediately transformed into viral memes that captured public outrage about his overall

[536] Ibid

[537] Ibid

management of the Ministry of Health more effectively than traditional news coverage (See Image 16 below). Second, it accelerates the personalization of politics, shifting focus from institutional processes to individual personalities. This manifested, for example, in the emergence of senator 'Super Renan' Calheiros as a heroic figure and the transformation of testimonies into personality-driven confrontations. Third, according to Castells, it fosters political discussions based on intense emotional triggers at the expense of nuanced and in-depth political debate, as evidenced by the viral spread of dramatic moments like witness arrests or heated exchanges that generated intense public reaction, turning politics into a spectacle. These transformations are not merely stylistic—they represent a fundamental shift in how political accountability operates in the network society.

This heightened emotionality and personalization of political discourse proved particularly potent during the CPI because it tapped into widespread public anger over pandemic mismanagement. When senators began acknowledging and responding to social media reactions during hearings, they were not simply adopting new communication tactics—they were leveraging the network's emotional dynamics to enhance institutional power. One of the effects of the mediatisation of politics is the accentuated role of scandals in the political sphere, which Castells terms 'Scandal politics',[538] wherein revelations of transgression or misconduct become powerful drivers of political discourse and action – reminiscent of the drama of a reality TV show. These processes involve media amplification of political scandals, public reaction, and institutional responses, creating cycles of outrage that can significantly impact political legitimacy and power relations of institutional bodies such as the government or the

[538] Ibid

Judiciary. In this logic, scandals become the currency for swaying public opinion and amassing communication (and political) power.

The following sections examine how the CPI materialised these significant political transformations. To understand how the CPI achieved unprecedented public engagement through media politics, we must put into perspective the historic role of public broadcast TV as a form of publicizing politics in Brazil.

9.2.1 Broadcasted Politics and the CPI da Covid's Record-Breaking Public Engagement

The CPI da Covid achieved unprecedented viewership, serving as a trigger for fundamental transformations in how Brazilian society participated in the CPI's institutional processes. The three Branches of Power in Brazil maintain public broadcasting services to report on their activities. The objective of these channels, which range from public radio stations, TV channels, to digital services such as YouTube channels, is to serve a general mission of transparency and accountability of public power and office holders to the Brazilian population.

In the Legislative Branch, the broadcasting channels, TV Senado (Senate) and TV Câmara (Chamber of Deputies), emerged from a continuing effort of democratisation after decades of repressive military dictatorship. The Senate's TV and Radio were established in 1995, under Federal Law that regulated the creation of TV Cable companies and allocated mandatory channels to the Senate and the Chamber of Deputies.[539] The channel TV Senado was created in the same year[540], and the TV Câmara

[539] Lei nº 8.977, de 6 de janeiro de 1995 (Brazil) http://www.planalto.gov.br/ccivil_03/leis/l8977.htm accessed 11 March 2025.

[540] Senado Federal (Brasil), 'Resolução do Senado Federal nº 21, de 7 de outubro de 1997' (Senado Federal, 7 October 1997) https://adm.senado.leg.br/normas/ui/pub/normaConsultada?idNorma=205299 accessed 11 March 2025.

followed in 1997,[541] as initiatives for inform the population of parliamentary activities through public broadcast television. These channels subsequently integrated into a broader national multimedia communication network of the Legislative Branch, formed in 2012, which included digital communication channels,[542] and connects state assemblies and municipal chambers.

Today, both channels operate through multiple distribution platforms, including free-to-air broadcasting, cable television, satellite transmission, and digital broadcasting. Their public funding model reflects an understanding that democratic oversight requires sustained investment in communication infrastructure. The Senate's YouTube channel emerged as part of institutional adaptation, being launched in 2010,[543] and according to the Senate, Google recognised this as the first multi-programme initiative on YouTube ever recorded.[544] This evolution reflected a growing institutional understanding of the Brazilian Parliament that democratic engagement increasingly operated through digital communication. Furthermore, today both houses have institutional accounts on major social media platforms, including Facebook, X, Instagram, YouTube, TikTok, and Kwai.

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[541] Câmara dos Deputados (Brasil), 'Resolução da Câmara dos Deputados nº 21, de 7 de outubro de 1997' (Câmara dos Deputados, 7 October 1997) https://www2.camara.leg.br/legin/int/rescad/1997/resolucaodacamaradosdeputados-21-7-outubro-1997-321070-publicacaooriginal-1-pl.html accessed 11 March 2025

[542] Câmara dos Deputados (Brasil), 'Ato da Mesa nº 52, de 17 de outubro de 2012' (Câmara dos Deputados, 17 October 2012) https://www2.camara.leg.br/legin/int/atomes/2012/atodamesa-52-17-outubro-2012-774424-publicacaooriginal-137923-cd-mesa.html accessed 11 March 2025.Senado+4

[543] TV Senado N.a., 'Aos 29 anos, TV Senado se consolida também na internet com mais de 1,5 milhão de inscritos' (TV Senado, 7 February 2025) https://www12.senado.leg.br/tv/programas/noticias-1/2025/02/aos-29-anos-tv-senado-se-consolida-tambem-na-internet-com-mais-de-1-5-milhoes-de-inscritos accessed 11 March 2025.

[544] TV Senado, 'Jornalismo - TV Senado é a primeira emissora do mundo a transmitir multiprogramação no YouTube' (YouTube, 7 February 2025) https://www.youtube.com/watch?v=jTLZRuC66Yk accessed 11 March 2025.

Demonstrating the synergy between the public broadcast and social media, the Legislative TV Channels today display the social media handles of members of Congress and senators during their regular sessions. Representatives actively expand their personal social media engagement through the Legislature's public channels, especially as the recordings of the TV Senado or TV Câmara become clips that are widely shared on social media.

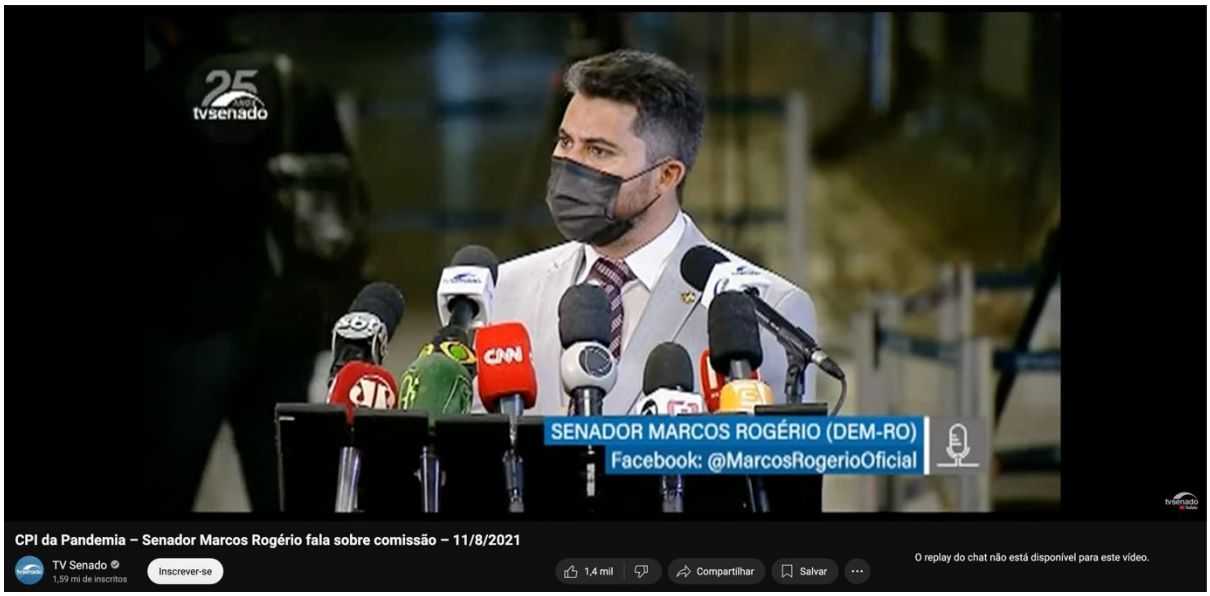


Image 15: TV Senado broadcast of Senator Marcos Rogério's interview, displaying his private social media handles. Sources.[545]

The Senate's digital strategy, including the integration of live streaming, session summaries, and educational content about legislative processes, proved especially significant during the Covid Parliamentary Inquiry, where content was aired in real time and quickly edited and reproduced across broadcast media and social media.

9.2.2 The Unprecedented Engagement of the CPI da Covid

Despite initiatives to communicate with the broader public, State communication, regardless of which Branch of power is concerned, is 'boring' to the

[545] TV Senado, 'Senador Marcos Rogério fala sobre comissão – 11/8/2021' (YouTube, 11 August 2021) https://www.youtube.com/watch?v=5cr7rZdXnGM accessed 11 March 2025.

public – with extremely low viewership. In April 2021, just before the CPI da Covid, TV Senado recorded an audience of 0.011 percentage points according to the Painel Nacional de Televisão, which monitors audience scores of public broadcast television.[546] In May, this number leaped to 0.028 points, which means the audience jumped from about 8,000 people to 20,000. These numbers seem unimpressive and obviously pale in comparison with TV Globo's audience of 12.66 points during that same period, approximately 9 million viewers,[547] representing nearly 34% of the national viewership.[548]

The more than doubling of these numbers is indicative of a much greater cascaded transformation when we discuss the shift in online viewership. The material recorded in the CPI was reproduced, edited, and analysed throughout the internet, achieving nation-wide significance. The Senate's YouTube channel also experienced significant growth during the investigation, gaining 169,800 new subscribers between April and June 2021 to reach 911,000 total subscribers[549] - a meaningful shift, but still not enough to represent a change in the nations' content consumption. However, these numbers are indicative of the general increase in attention towards politics (or shift from print to on-line media?), which also reverberated in all major channels and social media, which we can see in the skyrocketing viewership.

Daily viewership metrics demonstrated unprecedented public interest in the Commission's proceedings. The Senate YouTube channel's average daily views surged dramatically from 43,600 to 582,000 during the investigation, marking a thirteenfold

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[546] Vinícius Andrade, 'CPI da Covid mais do que dobra ibope da TV Senado; GloboNews lidera na TV paga' (Notícias da TV, 21 May 2021) https://noticiasdatv.uol.com.br/noticia/audiencias/cpi-da-covid-mais-do-que-dobra-ibope-da-tv-senado-globonews-lidera-na-tv-paga-57845 accessed 11 March 2025.

[547] Ibid

[548] Ibid

[549] Flávia Said, 'Com CPI da Covid, TV Senado registra recorde nos índices de audiência' (Metrópoles, 10 July 2021) https://www.metropoles.com/brasil/politica-brasil/com-cpi-da-covid-tv-senado-registra-recorde-nos-indices-de-audiencia accessed 11 March 2025.

increase in regular engagement.[550] Individual sessions drew even more remarkable audiences, with the Miranda brothers'[551] testimony on 25 June 2021 attracting 1.3 million views and ranking as the third most-watched video in the channel's history. Former Health Minister Eduardo Pazuello's appearance proved especially compelling, accumulating 2 million views across two days of testimony.

The CPI maintained extraordinary levels of public engagement throughout its proceedings, particularly during dramatic moments. When the Commission ordered a witness's arrest, viewership surged to over 2.3 million views across three days, averaging 775,000 views daily.[552] Several metrics demonstrated the investigation's broad appeal: (i) 81.2% of viewers were *new viewers* to the Senate channel; (ii) viewers watched for an average of 20 minutes and 23 seconds per session; (iii) demographic data showed engagement across diverse audience segment. These extraordinary figures underscore how the CPI transformed a recurrent instrument of parliamentary investigations, already mediatised into compelling political spectacle that riveted the nation.

The investigation's reach surpassed previous benchmarks for legislative content. The total engagement levels exceeded the 2016 impeachment proceedings, when the nation watched then-president Dilma Rousseff face a highly polarised impeachment process. This process was connected to the outcomes of the 'Lava Jato' investigations, which convicted politicians and businessmen in the biggest recorded corruption scandal in the country. Rousseff's impeachment generated 3.7 million views and represented the

[550] Ibid

[551] The 'Irmãos Miranda' case in the CPI da Covid involved allegations made by Luis Ricardo Miranda, a Health Ministry official, and his brother, federal deputy Luis Miranda. They claimed to have alerted President Bolsonaro about irregularities in the procurement of the Covaxin vaccine, suggesting potential corruption in the deal, which became a significant focus of the CPI's investigation. See BBC N.a., 'CPI da Covid: Quem é quem no escândalo Covaxin' (*BBC News Brasil*, 29 de junho de 2021) https://www.bbc.com/portuguese/brasil-57647163 acessado em 12 de março de 2025.

[552] Said (n 550)

previous high-water mark for legislative viewership.[553] The CPI totalled 34,4 million views throughout its two months of proceedings.[554]

One important aspect distinguished the CPI da Covid from other high visibility political scandals: traditional media amplification further expanded the Commission's reach, with networks including CNN, GloboNews, Band, and Record retransmitting sessions live, and also reproducing content that was produced over the internet, such as memes and edits. As I will discuss in the next Subsection 9.2.3, these engagement patterns opened the door for passive viewership to become active participation through social media platforms.

9.2.3 The Networked Public Sphere and Interactive Democracy

This shift towards a (social) mediatised political space and the increased engagement patterns are part of a process of profound reorganisation of the Brazilian public sphere. Yochai Benkler argues that the networked public sphere is a digital environment where individuals and groups engage in public discourse, share information, and participate in democratic discussions, facilitated by the internet and social media.[555] This multi-way communication models contrasts with the traditional mass-mediated public sphere, focused on one broadcasted unilaterally messaging multiple people. The internet public sphere allows decentralised participation, nonmarket production, and the potential for more democratic communication structures.

The Commission's proceedings became hybrid events where Parliamentary institutional authority intersected with networked participation, creating new spaces for

[553] Ibid

[554] Poder360 N.a., 'Com CPI da Covid, TV Senado registra recorde de audiência no YouTube' (Poder360, 10 July 2021) https://www.poder360.com.br/midia/com-cpi-da-covid-tv-senado-registra-recorde-de-audiencia-no-youtube/ accessed 11 March 2025.

[555] Benkler (n 109).

public engagement with democratic processes. Throughout this Chapter, we will see that the CPI da Covid was inserted into these new form of a public sphere. Castells' work[556] on networked communication builds on and updates Habermas' theory of the public sphere[557] - which focused on how bourgeois institutions like coffee houses and newspapers enabled rational-critical debate in early modern Europe. While Habermas was sceptical of mass media's effects on public discourse, Benkler and Castells see potential in digital networks to revive participatory democracy through decentralised, non-market communication. The CPI demonstrates this potential for expanded public engagement, though Section 9.4 will critically examine their optimistic vision of digital democracy. The CPI da Covid displays important aspects of an expanded, non-market driven, form of participating in institutional processes. We can see that both in how the anti-scientific network influenced public health policy and how social groups responses in engaging with the CPI da Covid. Having established how the CPI operated within this new networked public sphere, we can now examine how this manifested in specific forms of political engagement through memes and fan-like behaviour.

9.2.3 The Spectacle of Accountability: Meme and Fandom in Politics

The CPI's transformation into a 'political reality show' demonstrates how networked social movements emerge at the intersection of technological infrastructure and social practices. Networked social movements emerge through what Castells describes as 'networks of outrage and hope',[558] where shared grievances and aspirations combine with digital communication capabilities to enable new forms of collective

[556] Castells (n 52)

[557] Jürgen Habermas, *Between Facts and Norms: Contributions to a Discourse Theory of Law and Democracy* (William Rehg tr, MIT Press 1996)

[558] Manuel Castells, *Networks of Outrage and Hope: Social Movements in the Internet Age* (Polity Press 2012).

action. This framework emphasises how digital networks facilitate horizontal organisation, rapid mobilisation, and autonomous communication practices.[559]

Castells identifies several distinctive characteristics of networked social movements. These movements typically originate in moments of crisis, yet transcend specific triggers to address broader systemic issues. They operate through a hybrid of online and offline spaces, using digital networks for coordination whilst occupying physical spaces for visibility and impact. The movements maintain non-hierarchical structures, rejecting traditional leadership models in favour of distributed decision-making processes.

During the pandemic and the hearings of the CPI da Covid, people remained isolated at home under lockdown restrictions, leading to dramatically increased online presence. Consequently, online political mobilisation became the main driver of political change that would occur in person in the Senate, the central physical 'arena' of the political dispute.

One important aspect of media politics is a change in how politics is communicated. Messages undergo simplification, focusing on short forms that are easily understandable and disseminated.[560] Castells argues the simplest and most powerful message is an image, exemplifying the format of political discussion around memes and videos examined subsequently.

[559] Castells (n 65)

[560] Castells (n 65)



Image 16: Memes on mask usage contrasting anti-scientific deponents, such as Eduardo Pazuello, with pro-science figures like Luana Araújo. Sources [561]

Emotion also plays a crucial role in Castells' framework.[562] He argues that networked social movements are triggered by emotional responses. As such, they are particularly sensitive to instances of injustice and other emotional triggers of outrage, with digital networks amplifying and connecting these individual responses into collective action. The transformation of emotion into action occurs through communicative practices that build solidarity and shared understanding across diverse participants.

The CPI da Covid's unprecedented viewership, accentuated by scandals involving high visibility politicians, and individuals with substantial social media following, such as Nise Yamaguchi and Atila Iamarino, help explain the CPI's exceptional public engagement. Part of this increased visibility is explain by the CPI's distinctive convergence with Brazilian popular culture, particularly through its temporal and stylistic connection to Big Brother Brasil 2021 (BBB21). The show confines participants in a monitored house for approximately three months, combining elements

[561] Araujo: 'Em CPI, infectologista defende diagnóstico precoce, informação, testagem e vacina' (Senado Notícias, 2 June 2021) https://www12.senado.leg.br/noticias/materias/2021/06/02/em-cpi-infectologista-defende-diagnostico-precoce-informacao-testagem-e-vacina accessed 11 March 2025.; Pazuello: https://conteudo.imguol.com.br/c/noticias/cc/2021/06/09/general-pazuello-com-a-mascara-no-nariz-mas-nao-na-boca-1623235840790_v2_615x300.jpg accessed 11 March 2025

[562] Castells (n 52)

of social experiment, competition, and entertainment.[563] While the format has maintained consistency since its inception, the emergence of social media has fundamentally altered its cultural significance and public engagement patterns.

The show's evolution into a transmedia phenomenon proved particularly significant during 2020 and 2021, when pandemic conditions amplified its cultural impact. The 2020 edition marked a crucial transformation through the introduction of a hybrid casting model, combining anonymous participants ('Pipoca') with established celebrities and digital influencers ('Camarote'). This strategic adaptation enhanced the programme's digital engagement by leveraging contestants' existing social media followings whilst maintaining connection with ordinary Brazilian experiences through anonymous participants. The show operates as interactive entertainment, whereby the audience votes on which participants eliminated when they are sent to 'the big wall' ('paredão'), ultimately determining the winner of the programme's substantial prize and nation-wide fame.

The 2021 viewership was so intense that it broke with a trend of decline in broadcast television, matching the numbers of viewers in 2010, before the wide-spread use of social media and smartphone.[564] However, what is more relevant is how the show worked in tandem with social media, generating mindboggling numbers of engagement. The Brazilian social media discussions about the show was so intense that, during its airing, the programme generated more than 380 million tweets, and made it the most commented topic on Twitter global during the period, beating international successes

[563] 'Big Brother Brasil' (Wikipedia, 10 March 2025) https://en.wikipedia.org/wiki/Big_Brother_Brasil accessed 11 March 2025.

[564] Bruna Arimathea, 'Big Brother Brasília: Grupos no Telegram trocam o BBB por CPI da Covid' (*Terra*, 19 May 2021) https://www.terra.com.br/byte/big-brother-brasilia-grupos-no-telegram-trocam-o-bbb-por-cpi-da-covid,e07486929269dcc39d47551f7d4758d568o77oof.html accessed 11 March 2025.

such Netflix's Squid Game and series from the conglomerate Walt Disney.[565] The season's winner, Juliette Freire, exemplified the programme's expanded influence, accumulating nearly 30 million Instagram followers while still confined within the house.[566]

As BBB21 concluded a highly successful season in April 2021,[567] the Commission's proceedings inherited established patterns of real-time commentary and collective analysis from BBB21 viewership. Nicknamed 'Big Brother Brasília', social media communities that had formed around the reality show redirected their attention and analytical practices to the Commission's proceedings.[568]

Digital communities previously dedicated to analysing contestant behaviour and house dynamics adapted their practices to scrutinise witness testimony and political performance. The Telegram group 'Espiadinha',[569] which had garnered substantial following through BBB21 coverage and following other reality shows, exemplified this transition. In a media interview, group administrator Erica Mathias noted that the CPI filled an entertainment void while generating political awareness, observing that the Commission's proceedings sparked deeper public engagement with democratic processes. This extraordinary digital reach transformed traditional reality television

[565] Matheus Doliveira, 'Juliette passa Sabrina Sato e se torna ex-BBB mais seguida da história' (*Exame*, 26 May 2021) https://exame.com/casual/juliette-passa-sabrina-sato-e-se-torna-ex-bbb-mais-seguida-da-historia/ accessed 11 March 2025.

[566] Leandro Neves, 'BBB 21 bate recorde de anunciantes e de audiência' (*A Gazeta*, 6 May 2021) https://www.agazeta.com.br/colunas/pelo-mercado/bbb-21-bate-recorde-de-anunciantes-e-de-audiencia-0521 accessed 11 March 2025.

[567] Redação N.a., 'Big Brother Brasil bate Round 6 e séries da Marvel em comentários nas redes sociais' (*Notícias da TV*, 9 December 2021) https://noticiasdatv.uol.com.br/noticia/televisao/big-brother-brasil-bate-round-6-e-series-da-marvel-em-comentarios-nas-redes-sociais-71190 accessed 11 March 2025.

[568] Henrique Carlos, 'Big Brother Brasil 21 encerra edição com audiência surpreende e com vários recordes' (*Observatório da TV*, 2021) https://observatoriodatv.uol.com.br/audiencia-da-tv/big-brother-brasil-21-encerra-edicao-com-audiencia-surpreende-e-com-varios-recordes accessed 11 March 2025.

[569] Loosely translated to 'Taking a Peep,' as if spying or observing someone.

dynamics, creating new frameworks for public discourse that would subsequently influence political engagement.

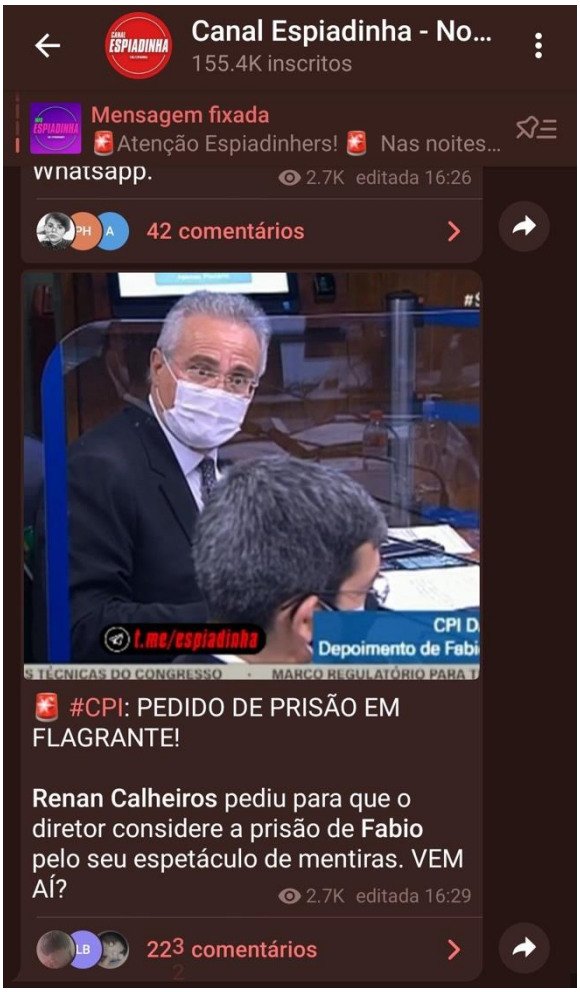


Image 17: Screenshot from Espiadinha's Telegram channel (>150k subscribers), sharing a CPI da Covid image with an alarming and gossip-like headline, informing of an arrest. At that moment, 2.7k views and 223 comments. Source: X[570]

These entertainment-driven engagement practices also transformed how people discussed the CPI's developments. As I illustrate below, communities maintained similar commenting patterns, transforming parliamentary procedure into compelling narrative arcs. Social media users applied familiar language from reality television to political oversight, tracking character development, identifying alliances, and anticipating dramatic confrontations. Group administrators interviewed by the media at the time noted

[570] @pedropjbrandao, 'A CPI da Covid é o Big Brother dos politizados' (Twitter, 12 May 2021) https://twitter.com/pedropjbrandao/status/1392565436546433025 accessed 11 March 2025.

heightened engagement during Commission sessions, with chat participation surging during testimony and sustained interest between sessions through anticipatory discussion. Interviewed by the media, anonymous political commentary account @jairmearrependi noted the opportunity to use popular language to broaden public interest in politics:

> This [is an] entertainment gap, but I see it as something positive because a large part of Brazilians perceive politics as something boring and difficult to understand. So, if you bring it into a more popular language, it sparks reflection in people, and they begin to take an interest (Author's translation).[571]

To illustrate how these social media interactions intensified during the CPI, the Commission's proceedings generated engagement metrics comparable to entertainment programming. During the former Chancellor Ernesto Araújo's testimony on the 18th of May 2021, Twitter users generated 31,000 messages in the opening hours. On the following day, former Minister of Health Eduardo Pazuello's appearance intensified this engagement, producing 165,000 mentions within two hours.[572] Additionally, 20 thousand tweets referenced Pazuello by the nickname 'Pazuzu', playing on his name and the name of a demon in the famous horror film 'The Exorcist' from 1973, and speaking to how the language of popular culture dominated the online discussion.

One anonymous political commentary account created online 'line-up' posters, calling the CPI da Covid the 'CPIpalooza,' playing with the name of the internationally

[571] Arimathea (n 565)

[572] Cesar Gaglioni, 'Como a CPI da Covid virou entretenimento nas redes' (Nexo Jornal, 19 May 2021) https://www.nexojornal.com.br/expresso/2021/05/19/como-a-cpi-da-covid-virou-entretenimento-nas-redes accessed 11 March 2025.

famous concert 'Lollapalooza'. The poster lists the 'attractions' of the month, the dates of hearings, names and titles of deponents, and other comments and jokes.



Image 18: A line-up poster by anonymous account @jairmearrependi listing CPI testimonies in a playful format. Source: X[573]

These cultural practices transformed how the public engaged with institutional proceedings in two key ways. First, they created a new shared language for discussing political events through memes and social media commentary. Second, they accelerated the personalization of politics, shifting focus from political parties to individual personalities. This personalization often cast political figures as heroes or villains, much

[573] @jairmearrependi, 'Aqui está o calendário da CPI da Covid pra você não perder nenhum lance.' (Twitter, 10 May 2021) https://twitter.com/jairmearrependi/status/1391978767057305607 accessed 11 March 2025.

like characters in soap operas - a framing that would prove particularly significant during the CPI. I will expand on the second issue in the next Section 9.3 Mass-Self Communication, Real-Time Feedback and a Networked Investigation.

One compelling example is the transformation of Rapporteur Senator Renan Calheiros into the figure 'Super-Renan,' thanks to the way he interrogated deponents, acknowledged the participation of internet users, and also knew the 'theatrics' of media politics.[574] As a result, the senator ascended to a near celebrity status. One famous podcast for political parody and commentary made a 'funk'[575] about Calheiros' activities in the CPI da Covid. This podcast, whose names translate to 'Fear and Loathing in Brasilia' offers in-depth political commentary while intensively permeated by memes and internet jokes.

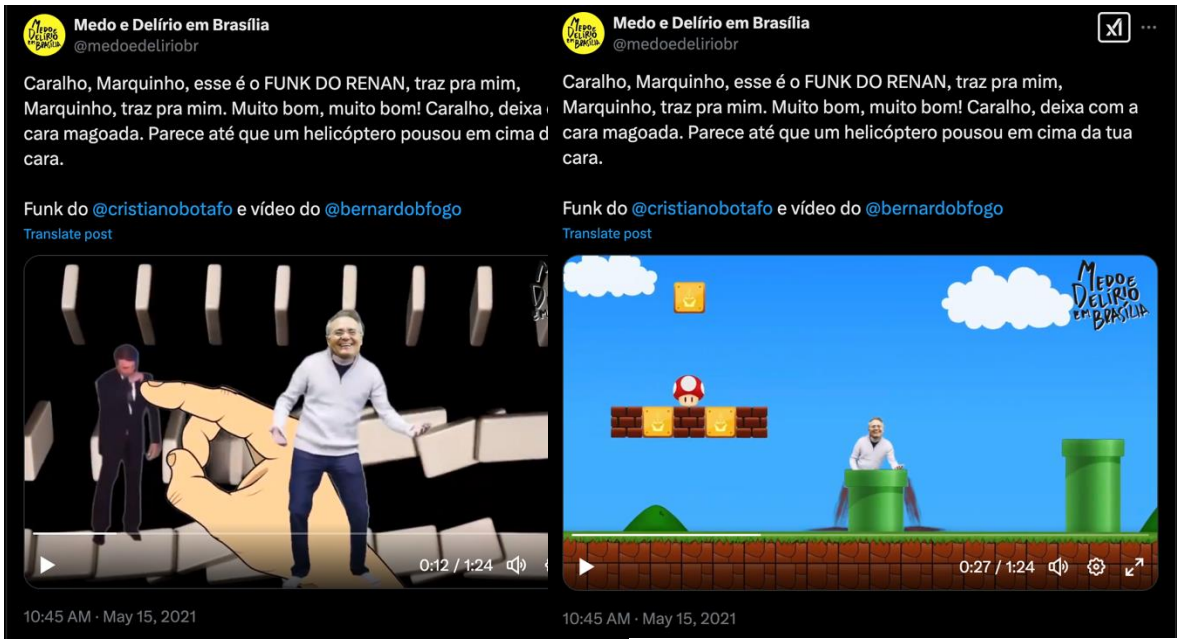


Image 19: The podcast Medo e Delírio em Brasília shared their funk track on social media, followed by a video clip. The edited footage shows Calheiros dancing while Bolsonaro, Pazuello, and others are flicked away, set against falling dominos and other jokes. The accompanying tweet mixes famous meme phrases, swearing, and parody to comment on politics. Source: X[576]

[574] For example, Calheiros replaced his name placard with a black sign displaying the number of Covid-19 deaths, updating it at each meeting as a public act of mourning.

[575] Refers to Brazilian Funk, a popular national music genre.

[576] @medoedeliriobr, 'Caralho, Marquinho, esse é o FUNK DO RENAN, traz pra mim, Marquinho, traz pra mim. Muito bom, muito bom! Caralho, deixa com a cara magoada.' (Twitter, 15 May 2021) https://x.com/medoedeliriobr/status/1393578208231047169 accessed 11 March 2025.

According to researcher Marta Mendes Rocha, this phenomenon emerged from a public desire for institutional effectiveness, reflecting hope that political power might check itself through networked forms of accountability. In an interview she produced an analysis that resonates with Castells' argument about 'networks of outrage and hope':

> It is the idea that Power will hold back Power. […] It is hope. Since the institutions can't handle [the situation], power itself will (Author's translation).[577]

This coincides with the motivations an interviewee, one anonymous social media account holder, mentioned for engaging with the CPI da Covid and contributing: people had 'blood in their eyes'[578] and sought to 'avenge all that the country was going through'(translated).

The outrage manifested through elaborate and constant meme creation, transforming complex political testimony into accessible cultural commentary. The meme production was intense and often the scenes from the CPI viralised *with* memes and *as* memes – reaching audiences much wider than Brazil.

One emblematic episode occurred when a pro-government Senator fell for a well-known online prank while arguing for the scientific effectiveness of Early Treatment. The prank consists of an online hoax that describes the participation of a female scientist in some important achievement. The text is shared along with a picture of the alleged scientist in a regular attire. The prank lies in that the woman in the picture is a very famous former adult film-star, who currently is a sports commentator and

[577] Poder360 N.a., 'Renan Calheiros faz "pergunta de internauta" em CPI da Covid' (Poder360, 19 May 2021) https://www.poder360.com.br/congresso/renan-calheiros-faz-pergunta-de-internauta-em-cpi-da-covid/ accessed 11 March 2025.

[578] Brazilian expression conveying an idea of rage and recklessness.

model. People who reproduce the hoax face the ridicule of proliferating blatantly false information, worsened by the fact that it is suggestive of adult content.

During the CPI da Covid, Senator Luis Carlos Heinze believed and misunderstood the hoax, saying that there were biased studies in the medical Journal the Lancet trying to undermine chloroquine success against Covid. He alleged that the companies running those studies were run by adult-movie actresses. Although he was confronted with the incorrectness of his claims, he insisted on this hoax to back his interrogations during the CPI da Covid. Senators broke into laughter on air.[579] This scandalous event made the Brazilian viewership explode, the vice-president of the CPI Senator Randolfe Rodrigues took advantage to mock his adversary on Twitter and even tagged the sports commentator on Twitter. The commentator joined in the discussions and mocked the pro-chloroquine Senator Heinze posting an edited picture of her at the CPI da Covid and saying

> I don't know who needs to hear this (Brazil), but I'm not a doctor so don't take medical advice [sic] from fake memes you find about me on WhatsApp… tchau.[580]

The commentator had a few interactions with the CPI discussion and this just further catalysed the gossip and reality TV-nature of the discussions.

[579] Redação, 'CPI da Covid volta a citar fake news de atriz pornô, e senador vira piada' (Notícias da TV, 9 June 2021) https://noticiasdatv.uol.com.br/noticia/televisao/cpi-da-covid-volta-citar-fake-news-de-atriz-porno-e-senador-vira-piada-59068 accessed 11 March 2025.

[580] Poder360 N.a., 'Ex-atriz pornô Mia Khalifa volta a ser pauta na CPI da Covid' (Poder360, 30 September 2021) https://www.poder360.com.br/congresso/ex-atriz-porno-mia-khalifa-volta-a-ser-pauta-na-cpi-da-covid/ accessed 11 March 2025.



Image 20: Twitter interactions between an international celebrity featuring retweets of Senator Randolfe Rodrigues during the CPI da Covid.[581]

The traditional media also saw in the production from the internet a chance of better engaging with its viewers and readers, they regularly compiled the most shared memes associated to episodes of the CPI da Covid. They would also invite certain social media accounts for interviews and comment in national news, often still anonymously.[582] The senators quickly realised the potential of these online communities and participated in interviews and podcasts that were originally for gossip and pop culture.

These cultural practices can be analysed as two concurrent and somewhat contradicting phenomena. On the one hand, they facilitate the broader public participation in democratic processes. Meme circulation and fandom engagement created accessible entry points for citizens to engage with complex political proceedings. On the other, a question remains whether this spectacularisation of politics serves to improve the quality of the political debate. The integration of meme culture and fandom practices into the CPI as an institution increases attention and interest in the CPI da Covid, but in turn also create distinctive challenges for institutional legitimacy. I will discuss this in

[581] Ibid

[582] See Image 24 below

more detail in analysing individual accounts in the next Section and the issue of legitimacy of the CPI da Covid in the final Section 9.4.

9.3 Mass-Self Communication, Real-Time Feedback and a Networked Investigation

9.3.1 Mass-self communication: The One-to-Many Networked Communication

Castells' concept of mass self-communication sheds light on a fundamental shift in contemporary communication patterns.[583] His framework, developed through analysis of network society, describes an emerging form of communication that simultaneously achieves mass reach while remaining self-generated, self-directed, and self-selected in nature. This marks a decisive break from traditional broadcast models. Where conventional mass media relied on centralised, one-to-many distribution channels, mass self-communication enables decentralised, many-to-many interactions across networks. Through this transformation, individuals become autonomous nodes within broader communication networks, freely generating, distributing, and consuming content across multiple platforms.

The 'mass' component of this concept derives from the potential reach of digital communications across global networks. Through social media platforms, blogs, and other digital channels, individual communications can achieve widespread distribution, potentially reaching a global audience. The 'self' aspect emphasises individual agency in

[583] Castells (n 52)

content creation, platform selection, and message distribution, marking a departure from institutional gatekeeping practices characteristic of traditional media systems.

This concept can be used to further understand the role of individuals in catalysing and exploring these interactions between the CPI da Covid and internet networks. As Castells discusses, mass self-communication facilitates new forms of social organisation and political mobilisation, and it is clearly that the Cpi da Covid touched upon the potential of a nation of disgruntled internet users (and citizens). The concept proves particularly valuable for understanding contemporary social movements, where individual expressions of dissent or solidarity can rapidly scale into collective action through digital networks – though can also be a source of fragility to the coherence of the networks. Building on the notion of media (and meme and fandom) politics above, the concept of mass self-communication helps us understand contemporary phenomena particular to an internet-based public sphere, such as viral content, influencer culture, and digital activism exemplify how individuals navigate between personal expression and mass communication.

9.3.2 The anti-scientific network's use of influencers and mass self-communication

The anti-scientific network was aware of the potential of mass self-communication in propagating ideas that would support the use of Early Treatment. As mentioned briefly in Chapters 1 and 6, the federal government hired celebrities and influencers to propagate Early Treatment. Here, I will briefly outline cases where the Bolsonaro government has contracted social media creator to propagate Early Treatment, and in the next subsection 9.3.3 I will discuss how the CPI da Covid sought to leverage its influence through mass self-communication by the Senators and social media users.

The Brazilian Federal Government's deployment of social media influencers to promote 'Early Treatment' represented a systematic attempt to leverage digital networks for promoting unproven Covid treatments. Government records reveal substantial investment in this strategy, with the Federal Government spending more than R$1.3 million on marketing activities involving social media creators during the pandemic.[584] This expenditure included R$85,900 distributed amongst 19 prominent social media figures for pandemic-related campaigns, with R$23,000 specifically allocated to four influencers for promoting what was termed 'early care,' being an intentional ambiguity on the term 'Early Treatment'.[585].

The case of Flávia Viana, a participant of the 2007 edition of Big Brother Brasil, exemplifies how the government strategically used influencers to expand its reach. Viana received R$11,500 to promote 'Early Treatment' through her Instagram account, which commanded significant public attention.[586] Her sponsored content, published in January 2021, generated substantial engagement with nearly 33,000 likes. The timing proved particularly significant, as her promotion of 'Early Treatment' coincided with oxygen shortages in Manaus hospitals.

[584] Laís Martins, 'Por dentro dos grupos que fornecem informações para a oposição na CPI da Pandemia' (El País Brasil, 20 de maio de 2021) https://brasil.elpais.com/brasil/2021-05-20/por-dentro-dos-grupos-que-fornecem-informacoes-para-a-oposicao-na-cpi-da-pandemia.html acessado em 11 de março de 2025.

[585] Ibid

[586] Ibid



Image 21: Social media creator Flávia Viana posted recommending her followers to seek 'Early Care' if experiencing Covid symptoms. Source: Martins (n 585)

The government's social media strategy was intentional in their message construction. Influencers received specific guidance from the Secretary of Communication of the Presidency (SeCom) regarding content presentation. The prescribed format included one feed post and six stories on Instagram, with carefully crafted and ambiguous messaging disseminated 'Early Treatment' use while also encouraging followers to 'immediately seek medical attention and request early care' upon experiencing Covid-19 symptoms.[587] The circumvention of the public health system and also control mechanisms, such as preventing non-doctors to prescribe medication, manifested through deliberate ambiguity between medical terminology. Government communications strategically alternated between 'early care' and 'Early Treatment', creating semantic confusion that facilitated promotion of unproven medications. This strategy sustained the plausible deniability of any intentional violation of rules (resonating with the findings of Chapter 7). Other prominent influencers

[587] Ibid

engaged in this campaign included João Zoli with 747,000 followers, Jéssika Taynara commanding an audience of 309,000, and Pam Puertas reaching 151,000 followers.[588]

However, the government's influencer strategy ultimately backfired in several ways. Ethical concerns about promoting unproven treatments led to a public backlash, with many followers demanding influencers return their government payments. This controversy culminated in legal intervention that prohibited all government promotion of 'Early Treatment' and Covid kits, and obliged influencers to issue public apologies.[589]

The strategy revealed a broader pattern in the anti-scientific network's approach to mass self-communication. By engaging digital personalities and encouraging key figures to act as influencers themselves, the network attempted to circumvent traditional institutional gatekeepers while creating an appearance of grassroots support. This approach extended throughout the network's leadership: the then-president Jair Bolsonaro and his sons prioritized communication through personal social media accounts; meanwhile, key deponents like Nise Yamaguchi and Osmar Terra actively disseminated their views as 'personal' opinions; and government officials leveraged their social media presence to blur the line between institutional and personal communications. This resonates with the findings of Chapters 6 and 7.

Interestingly, in its reaction to the anti-scientific network, the CPI da Covid reached out to the same mechanisms of mass self-communication to generate social support and networked power. In the next Section, I describe how the CPI da Covid

[588] Ibid

[589] Wanderley Preite Sobrinho, 'Justiça proíbe governo de propaganda de "kit-covid" e tratamento precoce' (UOL Notícias, 30 de abril de 2021) https://noticias.uol.com.br/saude/ultimas-noticias/redacao/2021/04/30/covid-coronavirus-infuenciadores-tratamento-precoce-kit-covid-secom.htm acessado em 11 de março de 2025.

senators sought to leverage their investigative capacities and political powers in the same dynamics.

9.3.3 Politicians as Influencers and Celebrities

The opposition senators particularly embraced networked forms of communication, developing strategies for incorporating public participation into the formal proceedings of the CPI da Covid. Senator Renan Calheiros, the Commission's rapporteur, regularly acknowledged online audiences during sessions. For example, Calheiros integrated digital participation by soliciting questions through Instagram's suggestion box feature before interrogating former minister Eduardo Pazuello, explicitly attributing certain lines of questioning to public input during the proceedings.'[590]

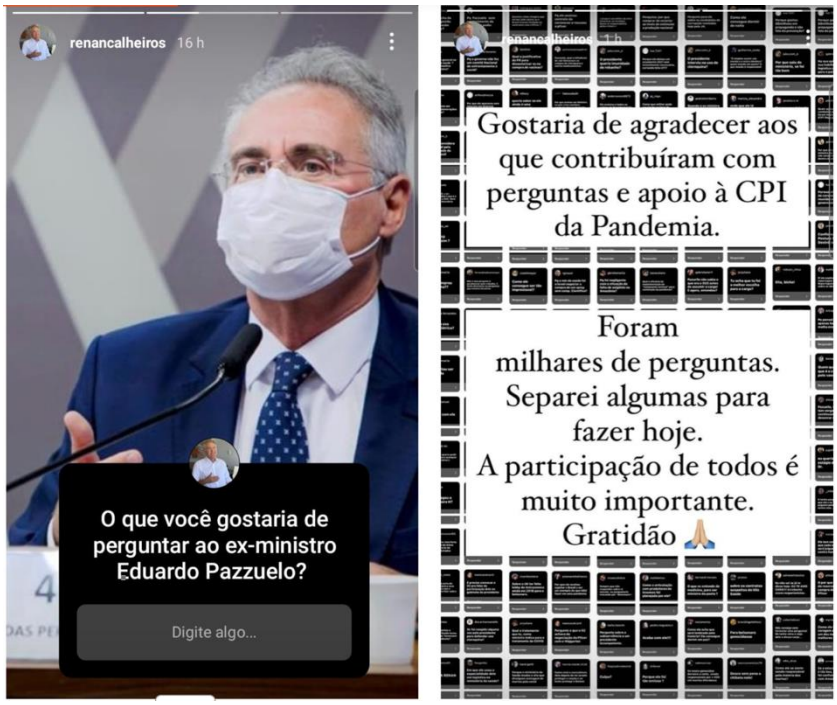


Image 22: Two screenshots from Calheiros' social media: one shows a question box asking, 'What would you like to ask former Minister Eduardo Pazuello?'; the other displays the overwhelming responses, stating, 'Thank you for the questions and support for the CPI da Pandemia. Thousands of

[590] Poder360 (n 581)

questions were submitted. I selected a few for today. Public participation is crucial. Gratitude. 🙏' (Author's translation). Source: Poder360[591]

As mentioned above, the 'Super Renan' phenomenon particularly exemplified the transformation of how investigations became mediatised, stages for senators who found ways of leveraging public attention. One emblematic cartoon released by newspaper Folha de São Paulo on June 2, 2021, depicts anonymous political accounts, disguised as superheroes, punching figures of the anti-scientific network *through the screen*, as Calheiros questions the deponents of the CPI.

This powerful cartoon captures many aspects of the role of the network in the investigations: the fact that the heroes are anonymous, that they are delivering their blows from their homes using their personal devices, the caricaturesque depiction of the deponents, for example Pazuello's depiction with the misplaced mask (See image 16 above). Such representations added to the rampant engagement described before, indicate the CPI da Covid's capacity to sustain legitimacy in the view of a broader public, to the extent that the population abandoned its role as an audience actively supported the investigative efforts. Calheiros knew how to explore this public support and fandom.



Image 23: Cartoon by Leonardo Assis and Triscila Oliveira published by newspaper Folha da São Paulo on June 2, 2021. The cartoon depicts the anonymous social media accounts who contributed to

[591] Ibid

the investigations as superheroes. They are 'making justice' against deponents who supported 'Early Treatment' through their mobile devices. Source: X[592]
https://x.com/folha/status/1400064654878003200/photo/1

The Commission members' social media activity intensified throughout the investigation to seize this opportunity. The 18 senators involved published 10,205 tweets during the six months leading to the Commission, excluding engagement on other platforms.[593] The CPI's president Omar Aziz dramatically increased his social media presence, expanding from merely eight tweets across four months to 482 posts in June 2021. Individual posts achieved substantial reach—Randolfe Rodrigues's message denouncing the federal government's vaccine procurement failures garnered 75,000 likes.

[592] Folha de S.Paulo, 'Esta é a charge de Leandro Assis (@leandroassis73) e Triscila Oliveira (@soulanja) publicada em todas as plataformas da Folha.' (Twitter, 2 June 2021) https://twitter.com/folha/status/1400064654878003200 accessed 12 March 2025.

[593] Helga do Nascimento de Almeida and Mario Sergio Araujo Dias, 'E com vocês os internautas: Uma análise sobre os dois primeiros meses da CPI da Pandemia no âmbito das mídias sociais' (2022) 10(2) *Caderno Eletrônico de Ciências Sociais* 78 https://doi.org/10.47456/cadecs.v10i2.39693 accessed 11 March 2025.

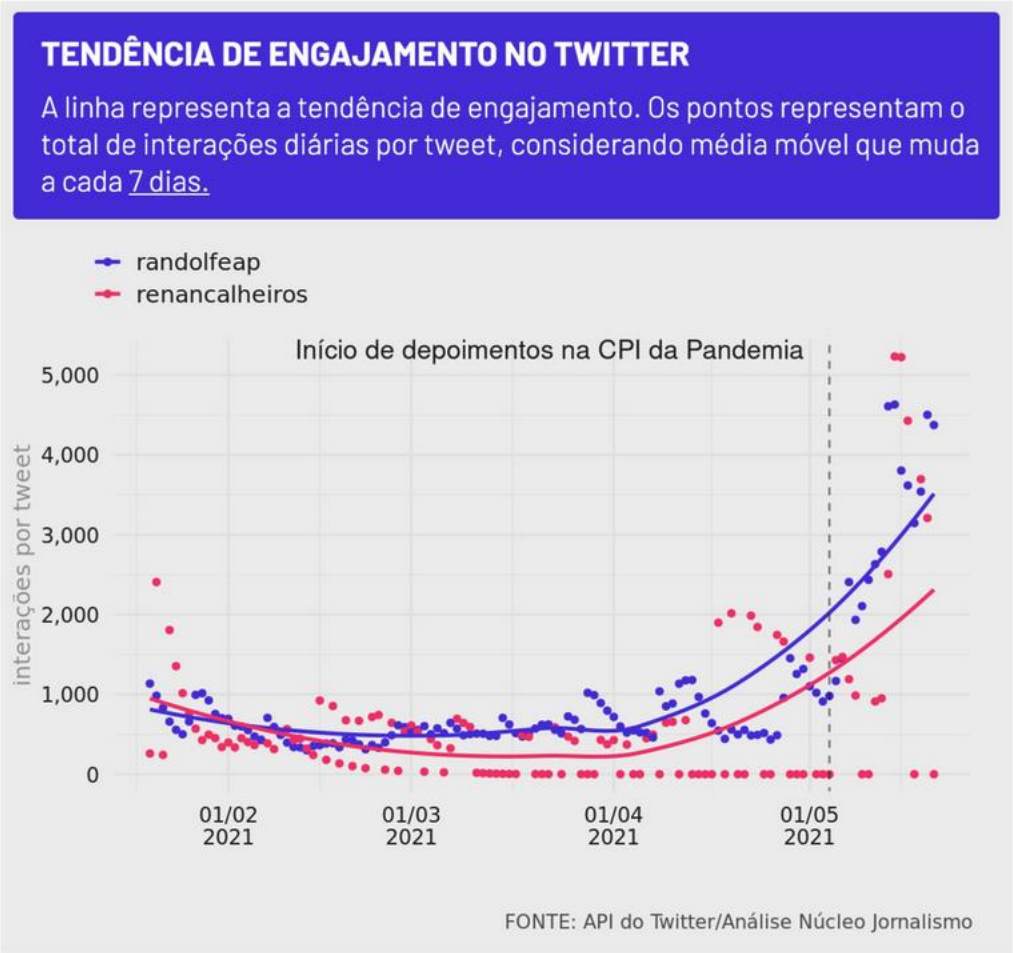


Figure 6: A study by Núcleo Jornalismo identifies a surge in social media engagement with Renan Calheiros and Randolfe Rodrigues during the CPI da Pandemia. Source.[594]

The metrics reveal substantial transformation in senators' digital engagement and how they sought to take advantage of the visibility opportunity that presented itself. CPI senators gained 1.5 million followers across social media during the inquiry.[595] The senators who most ascended in followership include pro government senator Marcos Rogério who gained 469,000 followers, followed by opposition senator Randolfe Rodrigues with 412,000, the presiding senator Omar Aziz with 213,000, and then Calheiros with added 77,000 followers. In seeking an increased dialogue with the

[594] Martins (n 585)

[595] João Mattar and Luiza Ferreira, 'Representação política online e o fenômeno da CPI da Covid nas redes sociais' (2021) 3(6) *Boletim de Conjuntura do Programa de Educação Tutorial de Relações Internacionais da Universidade de Brasília* 48 http://petrel.unb.br/images/Boletins/Petrel_v3_n6_out_2021/MATTAR_J_FERREIRA_L_PETREL.pdf accessed 11 March 2025

population, the senators began to dialogue with the entertainment and political commentary account, mentioned in Section 9.2, who shifted their attention from BBB21 to discuss the CPI da Covid.

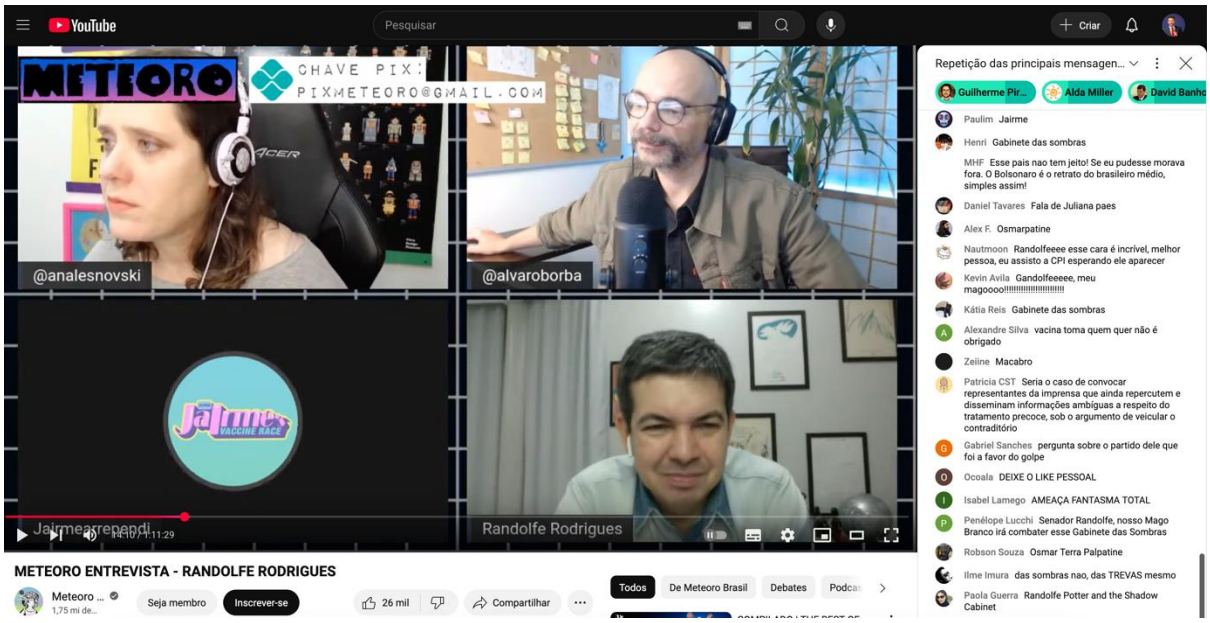


Image 24: Pop culture podcast and YouTube channel *Meteoro Brasil* interviewed Senator Randolfe Rodrigues and anonymous account @jairmearrependi, a key supporter of the investigations. The video amassed over 170k views, 26k likes, and nearly 1k comments, with users praising Rodrigues as a celebrity and hero.[596]

With these exchanges, senators actively incorporated digital evidence into formal proceedings. They regularly presented social media content during questioning, using tweets, videos, and online publications to establish factual records. The CPI Covid tapped into these exchanges and began exhibiting videos shared by the media and users reporting on the crisis.[597]

[596] TV Senado, 'CPI da Pandemia: Depoimento de Fabio Wajngarten – 12/05/2021' (YouTube, 12 May 2021) https://www.youtube.com/watch?v=vxsNwcrZw6I accessed 11 March 2025.

[597] TV Senado, 'Senadores investem em vídeos na CPI da Covid para reforçar depoimentos' (YouTube, 2021) https://www.youtube.com/watch?v=j8RbeQygPgk accessed 11 March 2025.

Digital communications became central to the CPI da Covid in two very distinct layers. One, as a senators tapped into the online debate, leveraging the CPI da Covid's legitimacy, the political pressure on the government, and driving a crowdsourced effort to investigate the government. Second, in a very distinct way, the aggregation of digital content became at the heart of the CPI da Covid, as the discussion centred around how people propagated covid disinformation on their personal accounts. This speaks to the findings of Chapters 7 and 8 about how the anti-scientific network attempted to use social media as a space to diffuse responsibility in the form of 'opinions', separated from their public roles and produce an 'accountability gap'. In this regard, the networked compilation of evidence provided was critical. It helped locate and make sense of the trove of disconnected information on the internet, which often got lost, hard to find through search engines, or often intentionally deleted.

This transformation extended beyond individual engagement to reshape institutional practices. The integration of digital content transformed traditional parliamentary procedure, creating hybrid spaces where institutional authority intersected with networked compilation of evidence. Senators acknowledged receiving real-time fact-checking and documentation from social media users during sessions, creating new models for public participation in oversight. In a way, society – in the form of online viewership – was 'in the room' with the Senators, as marked by this excerpt of Senator Jorginho Mello's dialogue:

> Very well. You believe in this so much… And **I want to give you the opportunity to emphasise this to those who are watching us.** Do you trust this treatment to the extent that you

> would use it yourself and treat members of your family?' (Author's translation).[598]

Senator Eliziane Gama's questioning strategy revealed this integration of digital communication as evidence and discussion space in the CPI da Covid.

> Doctor, **there is a tweet of yours in which you discuss the prescription for chloroquine**. You even present it in great detail on your Twitter account. I'll try to locate the tweet where you provide a detailed explanation of the prescription, that is, the technical guidance regarding chloroquine. […] (Emphasis added and Author's translation).[599]

The evidence senators gathered from the audience was so relevant that it was recurrently cited by senators, and even made it to the final report of the CPI. In the following subsection I will discuss the effects of this real-time exchange and the role of certain specific social media accounts, focusing on how the audience 'joined in' the investigation.

9.3.4 The Audience in the Room: Timeless Time, Space of Flows, and Real Virtuality

Castells' concepts of timeless time, space of flows help, and real virtuality help us understand how the CPI fundamentally transformed traditional parliamentary space and time.[600] Timeless time refers to the compression and reorganisation of temporal sequences through digital networks, 'Timeless Time' is marked both by instantaneity and

[598] Senado (n 324)

[599] Ibid

[600] Castells (n 65)

discontinuity. The concept explains how networked systems challenge linear chronological progression, creating temporal arrangements where traditional sequences become compressed or eliminated entirely. As an example, of how the internet enables instant messaging where conversations are exchanged instantaneously, but also drag out through time, as people stop and continue to exchange intermittently.

Space of flows[601] describes how social practices become simultaneously organised across different physical locations. The concept refers to the material organisation of simultaneous social practices that become decoupled from geographical contiguity. This concept explains how digital networks create new spatial arrangements that transcend traditional geographic boundaries. For example, consider how one can work with someone in an entirely different geographic context, such as a Brazilian speaking to someone in Japan, in real time.

This reconfiguration affects social relations, economic activities, and political processes, and facilitate what Castells terms 'real virtuality', [602] where reality itself is fully immersed in virtual representations created by multimedia systems. Castells uses the term to describe how people's experience of reality becomes mediated and integrated by the multiple media that permeate our social experience. In this thesis, I proposed using this concept to understand how the CPI also became permeated by this online experience. In this regard, the 'virtual' debate was also physically there, 'in the room'.

Together, these three concepts explain how the CPI created a hybrid space where institutional proceedings and networked participation merged. This transformation manifested in three key ways. First, the physical space of the CPI became permeable to digital participation, as senators actively incorporated real-time feedback

[601] Ibid

[602] Ibid

from social media into their questioning, exemplified by this statement from Senator Heinze during the CPI da Covid:

> On a point of order – I have a video; if it could be played, it would be very important. This video, from these anonymous people who help us across Brazil, comes from the countryside of São Paulo. He put together a compilation of the statements we have made here. And I would like to thank Hermes Rodrigues Nery. He is from São Bento do Sapucaí, São Paulo (Author's translation).[603]

Second, the temporal structure of parliamentary investigation shifted from linear progression to simultaneous engagement, as social media users fact-checked testimony in real-time and provided immediate evidence to counter false claims:

A significant demonstration of this integration of social media and the CPI da Covid occurred during former Communications Secretary Fabio Wajngarten's testimony. During former Communications Secretary Fabio Wajngarten's testimony, Wajngarten claimed he had not been involved with the government's 'Brazil Cannot Stop' ('O Brasil não pode parar') campaign in March 2020 due to Covid isolation, the Twitter account 'Jair me arrependi' (@jairmearrependi) immediately surfaced video evidence contradicting his statement.[604] The account shared footage from a social media livestream between Wajngarten and Congressman Eduardo Bolsonaro, son of Jair Bolsonaro. In it the former secretary discussed actively working and approving campaigns during the period in question. Senator Rogério Carvalho subsequently

[603] Senado (n 324)

[604] Mattar et al. (n 596)

incorporated this evidence into his formal questioning, leading Commission rapporteur Renan Calheiros to request Wajngarten's immediate arrest for false testimony.

Third, the boundary between institutional and public space dissolved as informal networks of investigators emerged to support the Commission's work. These networks, operating through WhatsApp, Telegram, and Discord channels, created parallel spaces of investigation that fed directly into formal proceedings.

In this regard, influencers and anonymous social media accounts played a crucial role. These accounts, particularly anonymous political commentary profiles, not only gathered evidence, but maintained public engagement, and served as important 'translators' of the bureaucratic processes to the broader audience. Their influence manifested through documentation practices and real-time analyses.

This dissolution of traditional institutional boundaries enabled perhaps the most significant transformation in parliamentary investigation: the emergence of systematic crowd-sourced investigation practices that would fundamentally reshape how the CPI gathered and verified evidence. The most concrete manifestation of this hybrid institutional-networked space emerged through organised crowdsourced investigations that directly supported the CPI's work, which I will discuss next.

9.3.5 Crowdsourcing Evidence and Institutionalising a Network

According to interviewees who worked with Senators and also managed social media accounts, the formation of this 'pro-CPI' network was quite spontaneous. As certain accounts became gained more visibility due to the content they shared, informal exchanges began between senators and these accounts. These exchanges led to the creation of WhatsApp, Telegram, and Discord channels, where multiple people would

discuss the CPI da Covid proceedings and exchange information that was would later be relevant evidence for the investigation.

According to an interviewee, certain groups would monitor the people summoned to testify, plan out the investigations, and allocate tasks within the network. The success of the crowdsourced investigations drew the attention from the public, who volunteered to collaborate. The network of anonymous accounts with the closest dialogue with the senators (referred to as the 'closed groups') managed to enrol 300-400 volunteers willing to aid in this crowdsourced process in separated telegram and WhatsApp groups (referred to as the 'broad groups').[605]

The anonymous accounts in direct dialogue with the senators would cross-check information, seek primary sources. They also intermediated the dialogue between about five 'broad' groups, three 'closed' groups and the CPI da Covid. During the hearings, these groups were active online fact-checking the testimonies in real-time and supporting the senators.[606]

The accounts @bolsoregretes, @camarotedacpi, @bolsoregrets, @tesoureiros and others emerged as particularly major contributors to the Commission's investigations. These anonymous profiles developed comprehensive documentation of the anti-scientific network's activities, providing senators with crucial background information for questioning witnesses. One interviewee claimed that their main contribution was the ability to record and systematise information, using Discord and Telegram channels, aided by the Web Archive to record all the information that was published during the pandemic. They compiled news articles but also documents the members of the anti-scientific network erased, creating a memory of the overwhelming

[605] Interview with anonymous social media manager (Brasilia, 11 February 2025)

[606] Ibid

events going on during the CPI da Covid. The network efforts, aided by many other volunteer users, quickly searched deponent's lives and compiled information in formats that were timely and easily useable by the senators.

Analysis of opposition senators' social media interactions positioned this account alongside established institutional sources like CNN Brasil and Globo News in terms of engagement frequency.[607] In fact, analysis of opposition senators' and independent senators social media interactions revealed consistent engagement with five key accounts: anonymous political commentator @jairmearrependi, social media influencer @leilagermano, then former president and current Lula's official account, CNN Brasil, CPI's president Omar Aziz's account, and Globo News. The fact that an anonymous commentator accounts and social media influencers have an amount of engagement on par with the president, its main opposition candidate, and the largest media company in the country is telling of the importance of the network.

These efforts drastically leveraged the CPI's investigative capacities. For example, the Commission's investigation of Carlos Wizard's involvement in the 'Parallel Cabinet' was part of this 'crowdsourced' investigation with institutional validation. After substantial social media discussion about his role in the anti-scientific network, the Commission issued formal subpoenas demanding his testimony, access to his communications, and breaking his bank confidentiality.[608]

The validity of crowd-sourced evidence emerged as a critical concern for the CPI's credibility. A core group of 10-15 trusted anonymous accounts (a 'closed group') developed rigorous verification practices to maintain investigative integrity. These

[607] Almeida et al. (n 594)

[608] Karine Melo, 'CPI da Pandemia aprova quebras de sigilo de cinco empresários' (*Agência Brasil*, 16 June 2021) https://agenciabrasil.ebc.com.br/politica/noticia/2021-06/cpi-da-pandemia-aprova-quebras-de-sigilo-de-cinco-empresarios accessed 11 March 2025.

accounts faced significant scepticism - journalists often dismissed their work, while pro-government senators complained that the CPI was being run by anonymous accounts. Understanding that any error could undermine both their credibility and the CPI's legitimacy, these investigators maintained exacting standards, often working until 2-3 AM to ensure thorough verification before morning hearings. The Senators' teams further strengthened this process by cross-referencing all social media findings against formal documentation. At every subpoena of the CPI da Covid, that generated large troves of information, the public would access the public information and dig into deep crowdsourced investigations. As I will discuss in nuance below, the network was aware of the need to ensure provenance and quality of the evidence, so it would not jeopardize the social trust in investigations. As a result, the network created its own verification processes – a process of creating its own 'institutions' or procedures and safeguards. As I discuss below, this should be analysed as both a benefit and a concern for the networked state model.

The crowdsourced investigation was so effective that it unfolded to identify other scandals. The CPI da Covid branched out into a major corruption scandal regarding Bolsonaro's government to buy vaccines that had no ANVISA approval. [609] These vaccines were 1000% above market price at the expense of R$ 1.6 billion (approximately 200 million pounds).[610] Beyond the CPI da Covid, for example, these crowdsourced investigations helped identify one of the invaders of the three branches of power during the attempted coup of January 8, 2023.[611] While many pro-Bolsonaro

[609] 'Covaxgate' (*Wikipedia*, 16 June 2021) https://en.wikipedia.org/wiki/Covaxgate accessed 11 March 2025

[610]Julia Affonso and Daniel Weterman 'Preço que o governo pagou por vacina indiana Covaxin foi 1000% mais alto' (*UOL*, 22 June 2021) https://www.uol.com.br/vivabem/noticias/agencia-estado/2021/06/22/preco-que-o-governo-pagou-por-vacina-indiana-covaxin-foi-1000-mais-alto.htm accessed 11 March 2025.

[611] @tesoureiros, 'Tweet content' (Twitter, 24 April 2023) https://x.com/tesoureiros/status/1650484403779321859 accessed 11 March 2025.

politicians claimed the riots were staged by the incoming President Lula, this network identified this 'rioter' was a military officer who had been supporting a coup by Bolsonaro 3 years earlier. This identification led the police to investigate this man and eventually identify pro-Bolsonaro politicians and businessmen who funded the invasions.[612]

One highlight of the integration of this investigation occurred during Ernesto Araujo's testimony, when senator Randolfe Rodrigues wielded a dossier with dozens of pages compiling the deponent's propagation of disinformation. The deponent was fact-checked and confronted during his testimony.



Image 25: A post from anonymous account @jairmearrependi on Twitter celebrates Senator Randolfe Rodrigues' use of a dossier by @tesoureiros. In the video, Rodrigues questions former

[612] Ibid

Foreign Minister Ernesto Araújo on mask use. When Araújo affirms support, Rodrigues immediately counters by citing Ministry-hosted events where a speaker condemned masks as harmful. Source: X[613]

The Commission members regularly acknowledged the significance of public engagement through digital platforms. Senator Renan Calheiros emphasised this dynamic during one session, noting:

> Look, President, at how significant the daily online feedback we are receiving from the Brazilian population is. And the involvement of these fact-checking agencies. At every moment, we receive information, either from agencies, corporations, or entities (Author's translation).[614]

Their contribution were so meaningful that in the closing session, the CPI da Covid made a tribute honouring their efforts. Their tweets were so important they were even used in the CPI da Covid's Final Report.

30/04/2020 - Propaga boatos de que caixões de mortos pelo covid-19 estariam sendo enterrados vazios.



Disponível em: https://archive.ph/j0Btu

Image 26: An excerpt from the senators' final report reproduces a social media post by @tesoureiros, which exposed Congresswoman Carla Zambelli for spreading a hoax claiming Covid victims' caskets were buried empty. Source: CPI da Covid's Final Report[615]

[613] @jairmearrependi, 'A CPI da Covid é o Big Brother dos politizados' (Twitter, 18 May 2021) https://twitter.com/jairmearrependi/status/1394701243965186050 accessed 12 March 2025.

[614] Senado (n 324)

[615] Senado (n 10) 761

Beyond the institutional response of the CPI indictments, the effectiveness of these accounts manifested in the public's perception and in their engagement metrics. As seen above, their posts regularly achieved nation-wide reach, with individual tweets garnering tens of thousands of interactions. This capacity to draw people's attentions and shape their views, which are important elements of Castells' notion of communication power, was achieved by offering the public means of understanding complex political developments. They served as translators of the institutional processes, being the network-switchers of the broad Brazilian discussion, marked by pop-culture, and the political bureaucracy. This function proved particularly significant given the technical nature of many issues the Commission investigated, including pharmaceutical regulations and public health policies.

Anonymous account @jairmearrependi in an interview to El País explained

> When we take the traditional journalistic format and transform it—into a funny thread, a more foolish card—we manage to bring the relevance of the CPI to folks that might not have paid much attention otherwise. I think it's fundamental, especially in this moment we're living through, which is literally a matter of life and death, that all eyes stay focused on every movement going on there (Author's translation).[616]

The relationship between these accounts and formal institutions resulted in a renewed model of sustaining effectiveness and legitimacy of the National Congress. However, these enormous amounts of views not only reshaped the procedures of the CPI da Covid, but also changed how authority and credibility are construed. Many of the

[616] Martins (n 585)

deponents, from both sides of the investigation, became 'celebrities' and influencers themselves and ran for office in the following years of 2022 and 2024.

9.4 A Permeable CPI: The Networked State and the Underpinnings of Online Legitimacy

The CPI's evolution demonstrates both the potential and challenges of institutional adaptation to network logic - while it enhanced investigative capacity and public engagement, it also raised important questions about democratic legitimacy and institutional stability in the network society.

Castells' concept of the networked state sheds light on fundamental transformations, in particular on the issue of how democratic institutions maintain authority in digital societies. Castells' concept helps us understand how the above mentioned phenomena of media politics, mass self-communication, changes in how time and space and experienced, and the networked public sphere change the nature of how institutions operate.[617] His framework reveals how traditional state sovereignty increasingly fragments as institutions become dependent on networks for operating, and in many ways become a hybrid form of institution and network. The CPI's evolution demonstrates this transformation, showing how democratic oversight increasingly operates through networked forms of power rather than purely institutional and procedure -based forms of power.

In fact, one interviewee who worked in the Senate explained that a similar model was used in later CPIs, though to a lesser degree and less engagement from internet

[617] Castells (n 52)

users. These included the CPMI[618] do 8 de Janeiro, which investigates the invasion of the headquarters of all three powers on January 8 2023,[619] and the CPI da Braskem, which investigated the liability of the company Braskem SA for an environmental catastrophe in Maceió, Alagoas.[620]

The Commission's adaptation to network logic proved particularly significant for maintaining institutional effectiveness. Rather than relying solely on traditional parliamentary procedures, and facing issues relating to navigating the vast and dispersed amount of information with limited staff, the crowdsourced investigation developed flexible approaches for incorporating digital evidence and public participation. It also leveraged the Senate's investigation capacities as evidence was compiled from several sources, and this in turn could be used to direct the police investigations. This strategic alignment with network dynamics enhanced rather than diminished institutional effectiveness, and a large portion of the population saw itself represented in the actions of the government.

However, these dynamics were also questioned. Anonymity and the source of information was a major concern throughout the investigation. Multiple requests were filed to identify accounts spreading covid disinformation online. At the same time, Senators from both sides relied on the anonymous contributions to the investigations, as mentioned above. As some senators criticised the CPI's publicity and reliance on social media accounts, even pro-government senators also used material from anonymous social media accounts, displayed them live and acknowledged the contributions of users. This brings the discussion back to the points from Chapters 7 and 8 on how the

618 A CPM is a *Mixed* CPI, meaning it operates jointly between the Senate and the Chamber of Deputies.

619 Senado Federal, 'Comissão Parlamentar Mista de Inquérito dos Atos de 8 de Janeiro de 2023' (*Atividade Legislativa - Senado Federal*) https://legis.senado.leg.br/atividade/comissoes/comissao/2606 accessed 11 March 2025.

620 Senado Federal, 'Comissão Parlamentar de Inquérito da Braskem' (*Atividade Legislativa - Senado Federal*) https://legis.senado.leg.br/atividade/comissoes/comissao/2642 accessed 11 March 2025

authority and credibility of bodies of knowledge are reformulated in these spaces of networked mobilisation, heightened visibility, and highly mediatised politics.

Also based on Castells' framework, this discussion prompts consideration of digital divides and power asymmetries within networks. Whilst digital technologies enable new forms of collective action, access to and control over these technologies remains uneven, potentially reproducing existing social inequalities within movement dynamics. In this sense, the CPI's effectiveness increasingly depends on management of media visibility and information flows. While digital engagement enhanced investigative capacity, it also revealed potential inequalities in democratic participation. Not all citizens possessed equal capacity to engage with networked forms of oversight, creating potential disparities in democratic engagement based on digital access and technical literacy – this can also produce other forms of asymmetry. We see hints of that when we acknowledge that specific groups had closer access to senators and that there were layers of association and access to information within those groups. Without institutional guardrails, we cannot really ensure this process is democratic.

In fact, increased engagement and visibility – even if negative - gives people a fluid type of authority. Many of the deponents, on both sides of the CPI da Covid, gained a lot of online followers. They became online celebrities, and many of them even

ran for office. This influencer phenomenon grants people a versatile credibility they explore from political activities to being celebrated in social events.



Image 27: On the right, deponent Nise Yamaguchi, with over 455,000 Twitter followers, ran for São Paulo city council. On the left, former Minister Eduardo Pazuello, linked to major pandemic scandals, was elected congressman for Rio de Janeiro. Data as of 14 February 2025. Source[621]

The CPI's adaptation ensured its capacity to preserve essential functions while evolving with technological change and to sustain legitimacy. However, this adaptation also revealed potential tensions between immediate effectiveness and long-term institutional stability. The Commission's innovative use of network engagement raised questions about sustainable frameworks for this hybrid functioning of institutions.

One interviewee from the senate acknowledged the important of this networked effort in the CPI da Covid, but said they did not like the change overall, saying 'Now [representatives] only do it for the cuts.' The word 'cuts' refers to the clips from the speeches that people extract from larger videos to make smaller social media content. This interviewee said that politics became too theatrical and oriented towards social

[621] Eduardo Pazuello, 'Twitter Profile' (Twitter) https://twitter.com/PazuelloGeneral and Nise Yamaguchi, 'Twitter Profile'(Twitter) https://twitter.com/nise_dra, accessed 11 March 2025.

media – that there were clear personas for the camera, that representatives elected through social media exposure only care about producing content to their networks, and that the content of the debate plummeted. This confirms Castells' theory on the network society on how media politics change the incentives for political debate and essentially reshape politics.

Subsequent investigations reveal the challenges of sustaining this model of networked engagement. When examining why later investigations - the CPI do 8 de Janeiro and CPI da Braskem - failed to generate similar levels of public participation, one interviewee offered a crucial insight:

> People just moved on with their lives. During Covid, we were all angry and locked up. It wasn't sustainable.

This observation highlights a fundamental tension in networked institutional oversight: public engagement appears to depend on extraordinary circumstances rather than sustainable democratic participation. One interviewee contrasted the dwindling of this network with the sustained engagement of the pro-Bolsonaro networks, which, in his reading, maintain mobilisation by continuously identifying new 'enemies'. His comment reflects serious questions about the long-term viability of institutional oversight that relies on maintaining network interest. This reading also speaks to lines of research beyond this thesis, focused on online populism and the used of misinformation, mentioned in Chapter 2.

These developments raise fundamental questions about the sustainability of networked-institutional models. For example, one major concern is the dependency on big social media platforms. While they enable these new forms of democratic participation, they are themselves private entities guided by shifting corporate policies rather than democratic principles. While platforms took stronger stances against

misinformation during Covid - even removing President Bolsonaro's content that violated health guidelines - recent policy changes at Meta (2024-2025)[622] demonstrate how quickly these governance frameworks can shift. This volatility raises concerns about building democratic institutions that rely on private infrastructure.

Moreover, the accountability gaps identified in Chapter 8 can extend these new networks, where we have little control of the 'who, what, and how' in this process of producing and validating evidence. There is little assurance that this process will respect democratic principles – such as ensuring all voices and evidence are accounted for.

These reflections do not mean the networked-state should stop and reverse – which I doubt is even possible – but indicate that elements of institutionality (e.g. procedure, assurances) need to be incorporated to sustain this process as a rights-based democratic model is preserved. These transformations suggest broader implications for democratic governance in digital environments. While networked forms of oversight can enhance institutional effectiveness through increased public participation and real-time verification, they also create potential challenges for democratic equality and institutional stability.

In conclusion, the CPI da Covid demonstrates both the potential and complexities of institutional adaptation in the network society. By strategically adopting networked practices—from leveraging social media engagement to enabling crowd-sourced investigation—the Commission enhanced its investigative capacity and public legitimacy in ways that proved particularly effective against the anti-scientific network. However, this transformation also revealed fundamental tensions between networked

[622] Meta, 'Oversight Board Selects a PAO on the Removal of COVID-19 Misinformation' (*Meta Transparency Center*, 26 May 2022) https://transparency.meta.com/ur-pk/oversight/oversight-board-cases/pao-on-COVID-19-misinformation accessed 11 March 2025; and Meta, 'More Speech and Fewer Mistakes' (*Meta Newsroom*, 7 January 2025) https://about.fb.com/news/2025/01/meta-more-speech-fewer-mistakes/ accessed 11 March 2025.

engagement and institutional stability. While the CPI successfully maintained its formal authority while adapting to network dynamics, questions remain about the sustainability of such hybrid institutional forms, particularly regarding democratic accountability and equal participation. The Commission's experience suggests that while democratic institutions can effectively evolve to meet the demands of digital society, this evolution requires carefully balancing networked practices with established democratic principles and procedures. This balance will be crucial for the future legitimacy and effectiveness of democratic oversight in an increasingly networked world.

Chapter 10

The New Gatekeepers: Platform Control, Scientific Authority, and Democratic Resilience

10.1 Introduction

This thesis argues that anti-scientific networks undermine democratic governance not simply by spreading falsehoods, but by restructuring the mechanisms through which scientific authority is disseminated and legitimised, in particular through an 'anti-science' network. Analysing Brazil's pandemic response, this study demonstrates how this network exploited institutional weaknesses, manipulated public trust, and leveraged digital platforms to construct competing conceptions of scientific legitimacy. This argument challenges conventional disinformation theories that treat false information as an external disruption, showing instead that networks can embed themselves within governance structures, reshaping decision-making processes from within institutions. Drawing on an analysis of testimonies from the CPI da Covid parliamentary inquiry in Brazil, this research demonstrates how an informal anti-science network effectively paralysed institutional safeguards through manipulation of scientific discourse and networked communication power.

This Chapter synthesises the findings and contributions of this thesis, and advances a reading of contemporary democracies based on the conclusions and methodological insights of the thesis.

The Chapter proceeds in four sections. Section 10.2 discusses the thesis' contributions to theory and methodology, particularly in extending and combining in innovative ways Castells' and Jasanoff's frameworks. Section 10.3 examines the practical implications for Brazilian institutions, including the lasting effects on public trust and institutional adaptation. Section 10.4 broadens the analysis to consider implications for democracies globally, particularly regarding platform control and scientific authority. Finally, Section 10.5 acknowledges limitations and suggests directions for future research.

10.2 Summary of Findings and Contributions

These strategies emerged from my research on a central question:

> How did the discourses generated by a network largely disconnected from the Brazilian public health system, over the years of 2020 to 2021, ignore and misconstrue scientific evidence to legitimise the adoption of 'Early Treatment' as a major policy response during the Covid-19 pandemic in Brazil?

This research demonstrates how networks manipulate the very structures that define scientific legitimacy, producing alternative frameworks of authority that compete with established institutional expertise. The findings reveal how the anti-scientific network systematically co-opted the mechanisms of scientific validation to advance its own political objectives. The investigation revealed three key mechanisms through which the anti-scientific network successfully challenged Brazil's public health institutions:

First, responding to RQ1, I examined how the CPI da Covid reconstructed the anti-scientific network and its discourse using Castells' framework of a Network Society.

As demonstrated in Chapter 6, the investigation revealed a network where actors spanned multiple domains – including government officials, medical professionals, private sector organisations, and social media influencers. The CPI's proceedings exposed how these actors coordinated to promote 'Early Treatment' while maintaining the appearance of scientific legitimacy.

Second, the network systematically reconstructed scientific authority by pushing for alternative frameworks for validating knowledge. Chapter 7 showed how network members strategically manipulated scientific discourse through three key strategies: manufacturing uncertainty around established evidence, elevating clinical experience over systematic research, and reframing Covid as primarily focused on individual-level issues, such as medical freedom and effectiveness of a certain drugs treating patients in isolation, rather than public health challenge.

Still in relation to the second sub-research question, Chapter 8 examines how the anti-scientific network leveraged expertise manipulation and institutional capture of specific bodies of the SUS to legitimise 'Early Treatment' while sidestepping accountability. Using Hood's concept of blame-avoidance, I demonstrate how network actors strategically exploited vulnerabilities in scientific and regulatory institutions, particularly within the SUS, to manufacture 'accountability gaps' - systematic voids in oversight where no single institution or actor could be held fully responsible for decisions. Political figures engaged in boundary-work—blurring distinctions between legitimate scientific authority and politically motivated claims. The analysis also reveals how institutional gaps were deliberately created to fragment decision-making, allowing government actors to avoid direct responsibility for public health failures. This process was not merely about rejecting science but about selectively redefining scientific legitimacy to maintain political control. This demonstrates that networked

disinformation does not simply oppose formal governance structures, but rather reshapes the influential public sphere to which those structures are accountable.

The third sub-research question explored the communication power strategies that enabled the network's social mobilisation. As analysed across Chapters 6 through 8, the network leveraged multiple channels of communication - from official statements to social media networks - to build public support while bypassing traditional institutional gatekeepers. The strategic use of mass self-communication allowed network members to maintain influence while sustaining accountability gaps, such as by enabling them to communicate directly with the population without going through institutional channels and producing communication through dispersed forms that are hard to collate into evidence in investigations. This created a political reality where formal decision-making bodies were forced to respond to networked pressure rather than their own evidence-based protocols.

Finally, the fourth sub-research question examined how the CPI itself adapted to network dynamics, particularly through social media engagement. Chapter 9 demonstrated how traditional democratic institutions are increasingly forced to operate through networked forms of communication to maintain their legitimacy and effectiveness. The CPI's strategic use of social media to build public support while investigating the anti-scientific network exemplifies exemplifies how governmental institutions must now engage directly in the battle over public narrative to sustain their power and perform their constitutional functions.623

These findings demonstrate a fundamental shift in how scientific authority is contested in democratic societies. By maintaining scientific appearance while systematically undermining institutional safeguards, networks can paralyse evidence-

based governance in ways that traditional theories of disinformation struggle to explain. These findings illustrate that anti-scientific networks do not merely spread disinformation but systematically reconstruct scientific authority. Existing theoretical models capture aspects of this process but require refinement to explain how networked power operates within institutions. The next Section develops these contributions by extending and combining in innovative ways Castells' and Jasanoff's frameworks to account for the mechanisms uncovered in this research.

10.2.1 Theoretical and Methodological Contributions

This research reveals that anti-scientific networks challenge democratic governance not by transforming institutional structures but by systematically manipulating the informational environments within which institutional decision-making occurs. The Brazilian case demonstrates how networks can achieve significant policy influence while leaving formal institutional procedures, legal frameworks, and decision-making authorities unchanged. This finding requires precision in understanding how networked power operates within democratic systems.

The anti-scientific network's primary achievement was environmental manipulation rather than institutional transformation. Ministers Eduardo Pazuello and Marcelo Queiroga retained identical formal authorities and procedural requirements as their predecessors, yet operated within fundamentally altered informational contexts that shaped their interpretation of scientific evidence, public expectations, and political calculations. The network created parallel frameworks for validating scientific knowledge through social media engagement, alternative expert testimonies, and strategic media

manipulation that generated public pressure influencing institutional actors without requiring formal structural change.

This environmental influence operated through what Castells terms 'communication power' that penetrated institutional boundaries while preserving formal democratic procedures. By establishing alternative information ecosystems that competed with traditional scientific validation mechanisms, the network influenced how existing decision-makers operated within unchanged institutional frameworks. The Ministry of Health continued following constitutional procedures for health policy development, yet these procedures occurred within informational environments systematically manipulated to favour unproven treatments over evidence-based alternatives.

Traditional regulatory approaches focus on institutional design and formal accountability mechanisms, yet these measures prove insufficient when networks systematically manipulate information ecosystems influencing institutional actors. The Brazilian experience demonstrates that protecting institutional decision-making autonomy requires addressing the informational contexts within which institutions operate rather than merely strengthening procedural safeguards. This analysis suggests regulatory frameworks must consider platform governance measures that protect institutional autonomy while preserving legitimate public discourse, potentially including algorithmic transparency requirements, content amplification oversight, and measures preventing coordinated inauthentic behaviour targeting institutional decision-makers.

Understanding networked influence as environmental manipulation rather than institutional transformation illuminates why traditional democratic defences proved insufficient against the anti-scientific network. Institutional procedures designed to protect against direct capture or external interference cannot address systematic

manipulation of the information environments within which these procedures operate. This finding has significant implications for regulatory approaches to platform governance, suggesting that protecting democratic institutions requires addressing the technological infrastructure of public discourse rather than focusing solely on institutional design.

Contributions to Castells' theory

While Castells' framework explains how networked communication power challenges traditional institutions, this study refines and expands his analysis in three key ways.

First, this research reveals that anti-scientific networks do not merely operate outside institutions but actively infiltrate, manipulate, and reshape them — they also systematically reconstruct institutional authority from within. Through the case of Brazil's Covid response, we see how networked power can subvert public health governance by exploiting institutional gaps, co-opting expertise, and mobilising social media to redefine what constitutes legitimate knowledge.

Second, this thesis deepens Castells' concept of communication power by showing how anti-scientific networks selectively co-opt scientific authority. By integrating Castells' insights on the mediatisation of politics with Jasanoff's concept of co-production, this study demonstrates that networked disinformation represents not merely an information disorder but a structural reconfiguration of decision-making authority.

While Castells' framework explains how networks challenge institutions through communication power, it does not fully capture how scientific legitimacy itself is co-opted and reconstructed. This is where Jasanoff's theory of co-production becomes

essential. By analysing how scientific and political authority are co-produced in networked environments, we can better understand how anti-scientific actors manipulate institutional credibility. The next Section integrates this perspective into the analysis.

Contributions to Jasanoff's theory

This thesis advances Jasanoff's theory of co-production by demonstrating how networks fundamentally reshape the processes through which scientific and political authority are constructed, contested, and legitimised. This research reveals how networked actors strategically bypass, manipulate, and repurpose these mechanisms to create alternative pathways of legitimation that sidestep conventional institutional scrutiny.

This research shows that networked disinformation does not simply undermine scientific authority but co-produces new 'scientific' claims aligned with political objectives. The network engaged in boundary-work, redefining expertise, evidence, and legitimacy in ways that blurred distinctions between scientific authority and political ideology.

Additionally, while Jasanoff's boundary-work framework traditionally focuses on how institutions delineate science from non-science, this study explores how networked actors perform boundary-work in a diffuse public sphere selectively erode and redefine these distinctions in their favour. This research demonstrates that co-production is not confined to regulatory or bureaucratic settings but increasingly takes place in networked, decentralised, and algorithmically amplified arenas.

Furthermore, this thesis deepens Jasanoff's insights into Public Reason and Civic Epistemologies by showing how networked mobilisation alters the very conditions under which public engagement with science occurs. Instead of institutionally mediated

processes of deliberation, legitimacy is shaped through viral content, algorithmic amplification, and real-time audience participation, producing an epistemic environment where scientific credibility is determined less by evidentiary robustness and more by strategic narrative dominance. This study thus advances Jasanoff's work by extending co-production theory to the realm of networked disinformation, demonstrating how scientific authority is not only contested but reconstructed within digital communication spaces, with profound implications for governance, democratic accountability, and the role of expertise in policymaking.

Methodological Contributions

This thesis makes methodological contributions by integrating Castells' network analysis, Foucauldian discourse analysis, and Jasanoff's methodologies from the field of STS to examine how networked disinformation reshapes scientific authority and public governance. While existing studies on disinformation often rely on quantitative content analysis or media forensics, this research advances the field by employing a qualitative, interdisciplinary approach that captures both the structural dynamics of networked mobilisation and the discursive strategies, such as STS and communication studies, through which legitimacy is co-produced.

First, this study contributes to network analysis by not merely mapping connections between actors but by incorporating Castells' theory of networked power to analyse how communication flows, institutional interactions, and discursive positioning influence political and epistemic authority. In my work, the exchanges between networks and institutions are scrutinized, demonstrating that hybrid nodes, who are part of both networks and institutions, play a critical role. This methodology successfully identified and explored the permeable relation between institutions and networks. By examining how key nodes within the anti-scientific network—ranging from political figures to

regulatory agencies and private actors—coordinated and reinforced narratives of Early Treatment, this research moves beyond traditional network mapping approaches that focus solely on information diffusion and instead situates networks within broader institutional and epistemic struggles.

Second, this study extends STS methodologies, particularly those associated with Sheila Jasanoff's co-production framework, by examining not just how science and governance interact within institutions, but how these interactions are fundamentally reconfigured through digital networked mobilisation. The thesis introduces a new methodological lens for analysing how scientific authority is weaponised and how institutional decision-making is now subjected to information spaces shaped by internet communications. By combining policy document analysis, interviews, and discourse reconstruction from the CPI da Covid hearings, this research creates a multi-layered methodology that captures the institutional, discursive, and networked dimensions of contemporary epistemic crises.

Finally, this thesis demonstrates the value of interdisciplinary methods in studying networked disinformation. By bridging law, political science, STS, and communication studies, it offers a comprehensive analytical approach that can be applied beyond the case of Brazil to investigate similar network and disinformation-driven governance challenges worldwide. This methodological synthesis provides a framework for future research on how digital networks reconfigure power, authority, and institutional legitimacy in the face of scientific and democratic crises.

These theoretical insights expose critical vulnerabilities in democratic institutions, particularly in contexts where scientific legitimacy is contested. The question, then, is how these dynamics played out in practice. By examining Brazil's public health response, this Section explores the lasting effects of how anti-scientific networks shaped policy

decisions, eroded institutional credibility, and forced democratic institutions to adapt to networked governance.

10.3 Practical Implications of this Study for Brazilian Institutions

The implications of this research extend beyond the Pandemic, revealing fundamental challenges to democratic governance in Brazil, in a context where distrust in the state is exploited to produce alternative modes of networked governance. Traditional institutional safeguards proved vulnerable to networked opposition, the erosion of scientific authority produced lasting effects on public trust, and, as explained in Chapter 9, democratic institutions were compelled to adopt network strategies to maintain their effectiveness. These challenges manifested through the CPI da Covid's accountability efforts, the persistent erosion of public trust in health institutions, and the broader transformation of Brazil's political-institutional landscape. Below, I will present the aftermath of the CPI da Covid and discuss its implications for Brazil in light of my findings.

10.3.1 Persisting Effects: Erosion of Public Trust and Vaccine Hesitancy

The CPI da Covid concluded with recommendations to indict 78 individuals and two companies, including then-President Jair Bolsonaro, on charges ranging from crimes against humanity to charlatanism.[624] These indictments highlighted systemic issues of negligence, corruption, and deliberate dissemination of disinformation. Though the

[624] Senado (n 10)

findings were referred to the Prosecutor General's Office (PGR), the investigation stalled under Prosecutor Augusto Aras, appointed by Bolsonaro, demonstrating the anti-scientific network's capacity to evade institutional legal consequences.[625]

Some legal consequences did emerge. Healthcare provider Prevent Senior faced sanctions for falsifying patient records, conducting unethical research on 'Early Treatment' efficacy, and compelling physicians to prescribe unproven treatments.[626] In November 2021, the company entered an agreement with São Paulo's Public Prosecutor's Office (Ministério Público – MP-SP) to reform its practices and publicly acknowledge the lack of scientific evidence for 'Early Treatment' protocols.[627] By 2024, the MP-SP's labour division pursued legal action against Prevent Senior for compelling doctors to prescribe 'Early Treatment' drugs in violation of professional norms.[628] Similarly, Hapvida, another healthcare provider implicated in the network, received fines from Ceará's Prosecutor's Office (MP-CE) for compelling doctors to prescribe and distribute 'Early Treatment' drugs.[629] More recently, regarding the people indicted in the

[625] Agência Senado, 'Senadores levam relatório final da CPI da Pandemia para PGR e STF' (27 October 2021) https://www12.senado.leg.br/noticias/materias/2021/10/27/senadores-levam-relatorio-final-da-cpi-da-pandemia-para-pgr-e-stf accessed 1 February 2025.

[626] Daniel Silveira, 'Prevent Senior, a empresa pivô de um dos maiores escândalos médicos na história do Brasil' (G1, 28 September 2021) https://g1.globo.com/economia/noticia/2021/09/28/prevent-senior-a-empresa-pivo-de-um-dos-maiores-escandalos-medicos-na-historia-do-brasil.ghtml accessed 1 February 2025.

[627] Valor Econômico N.a., 'Prevent Senior faz acordo com Ministério Público de SP e admite que "kit Covid" é ineficaz' (30 November 2021) https://valor.globo.com/brasil/noticia/2021/11/30/prevent-senior-faz-acordo-com-ministerio-publico-de-sp-e-admite-que-kit-covid-e-ineficaz.ghtml accessed 1 February 2025.

[628] MPT-SP, 'Prevent Senior é processada por assédio moral, irregularidades no meio ambiente de trabalho e violações contra a saúde pública' (MPT-SP, 2021) https://www.prt2.mpt.mp.br/1141-prevent-senior-e-processada-por-assedio-moral-irregularidades-no-meio-ambiente-de-trabalho-e-violacoes-contra-a-saude-publica accessed 1 February 2025.

[629] Afonso Benites and Beatriz Jucá, 'Hapvida omite morte por covid-19 em declaração de óbito, em ação similar à da Prevent Senior' (EL PAÍS Brasil, 2 October 2021) https://brasil.elpais.com/brasil/2021-10-02/hapvida-omite-morte-por-covid-19-em-declaracao-de-obito-em-acao-similar-a-da-prevent-senior.html accessed 1 February 2025.

CPI da Covid's report, a group of Senators petitioned to have the Prosecutor General's (PGR) investigation reopened in March 2024.[630]

Looking at the broader picture, the erosion of public trust in Brazil's healthcare system represents one of the most significant lasting impacts of the Bolsonaro government's pandemic response. Empirical research conducted between 2020 and 2021 revealed a substantial decline in public confidence, with only 50.6% of respondents expressing trust in hospital services and 41.4% reporting trust in primary healthcare services.[631] These findings were marked regional variations, where the Midwest and North regions, where Bolsonaro had high political approval, also displaying lower institutional trust and higher Covid-9 incidence and mortality rates.

This erosion of trust manifested most prominently in vaccination rates. Brazil, historically recognised for high immunisation coverage especially among children, experienced a dramatic decline in vaccination uptake between 2015 and 2021, with average coverage dropping from 88.85% to 62.35%. The Ministry of Health's target was 90–95%.[632]

The drivers of vaccine hesitancy in Brazil reflect complex interactions between conspiracy beliefs, political polarisation, and socioeconomic disparities.[633] One important cause are misleading narratives, fostering widespread scepticism about vaccine safety and

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[630] Hérica Christian, 'Senadores vão à PGR por desarquivamento de pedidos de inquérito da CPI da Pandemia' (Senado Notícias, 22 March 2024) https://www12.senado.leg.br/noticias/audios/2024/03/senadores-vao-a-pgr-por-desarquivamento-de-pedidos-de-inquerito-da-cpi-da-pandemia accessed 1 February 2025.

[631] Juliana Soares Tenório de Araújo et al., 'Level of Trust of the Population in the Unified Health System in the Midst of the Covid-19 Crisis in Brazil' (2022) 19(22) *International Journal of Environmental Research and Public Health* 14999 https://pmc.ncbi.nlm.nih.gov/articles/PMC9690632/ accessed 1 February 2025.

[632] Rossana Marchese Bittencourt Enore et al., 'Vaccination coverage and abandonment among children under two years old in Brazil: a time-series study' (2024) 42 *Revista Paulista de Pediatria*. https://www.scielo.br/j/rpp/a/RLVv6pYpbrYc9shY9KTJvbv/ accessed 1 February 2025.

[633] Emerson Lucas Silva Camargo et al., 'Determining factors for Covid-19 vaccine hesitancy among Brazilians: a study using structural equation modeling' (2024) 77(Suppl 2) *Revista Brasileira de Enfermagem* e20240112. https://pmc.ncbi.nlm.nih.gov/articles/PMC11370770/ accessed 1 February 2025.

efficacy. The politically polarised climate has transformed vaccination from a public health measure into an ideological marker, with political affiliations increasingly shaping attitudes towards government-led health initiatives. The pandemic itself disrupted routine immunisation services, diverting resources from essential vaccination programmes. These challenges particularly affect vulnerable populations, as lower-income groups demonstrate reduced confidence in health authorities and correspondingly lower vaccination rates.[634]

The Brazilian government responded with targeted interventions to rebuild vaccine confidence. In early 2023, the Ministry of Health launched the 'Movimento Nacional Pela Vacinação' (National Vaccination Movement) and 'Health with Science' platform to counter vaccine misinformation. These initiatives, supported by increased funding to states and municipalities, have shown modest progress, with vaccination rates for certain immunisations rising by 4.0% to 7.8% between 2022 and 2023.[635]

10.3.2 Institutional Adaptation: Visibility and Power

The CPI da Covid marked a turning point in how democratic institutions adapt to networked challenges, particularly through its strategic use of visibility and media engagement. The hearings, live-streamed and extensively covered on social media,

[634] Organisation for Economic Co-operation and Development, 'Drivers of Trust in Public Institutions in Brazil' (OECD Publishing, 2023). https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/12/drivers-of-trust-in-public-institutions-in-brazil_55a6fcbf/fb0e1896-en.pdf accessed 1 February 2025.

[635] Eder Gatti Fernandes et al., 'Restoring High Vaccine Coverage in Brazil: Successes and Challenges' (2024) 57 *Revista da Sociedade Brasileira de Medicina Tropical* e00600-2024. https://pmc.ncbi.nlm.nih.gov/articles/PMC10911277/ accessed 1 February 2025.

transformed the investigation into a space of public engagement that reshaped Brazil's political landscape in unexpected ways, making them into crowdsourced investigations with high public engagement, as discussed in Chapter 9.

This heightened visibility produced significant political consequences for key participants, and it seems to be the main 'currency' political actors seek. Senator Randolfe Rodrigues, who led the investigation, later ascended to leadership of the government's coalition in the Senate under President Lula's administration.[636] The proceedings elevated scientific communicators to national prominence, with Natalia Pasternak becoming widely recognised by USP as one of the most important scientific voices for Brazilians on Twitter and a regular commentator on science in major national media.[637] Atila Iamarino, a biologist and science youtuber who was invited and declined to provide an expert statement to the CPI, accumulated more than 1.5 millions YouTube subscribers[638] during the pandemic and was widely studied for his role in communicating science and debunking misinformation.[639]

Notably, even those criticised by the investigation benefited from the exposure—former Health Minister Eduardo Pazuello leveraged his increased visibility to

[636] Agência Senado, 'Jaques Wagner e Randolfe Rodrigues serão líderes do governo' (6 January 2023) https://www12.senado.leg.br/noticias/materias/2023/01/06/jaques-wagner-e-randolfe-rodrigues-serao-lideres-do-governo accessed 1 February 2025.

[637] Antonio Carlos Quinto, 'Quais São as Principais Vozes Brasileiras da Ciência no Twitter em 2021?' (Instituto de Ciências Matemáticas e de Computação da USP – São Carlos, 2021) https://saocarlos.usp.br/quais-sao-as-principais-vozes-brasileiras-da-ciencia-no-twitter-em-2021/ accessed 1 February 2025

[638] The YouTube Team, 'Atila Iamarino Walks Us Through His Extraordinary YouTube Career' (YouTube Official Blog, 15 March 2021) https://blog.youtube/creator-and-artist-stories/atila-iamarino-walks-us-through-his-extraordinary-youtube-career/ accessed 1 February 2025

[639] Carlos d'Andréa and Verônica Costa, 'One Biologist, One Million Deaths: Expertise Between Science, Social Media, and Politics During the Covid-19 Pandemic in Brazil' (2023) 5(3) *Journal of Digital Social Research* 18–40 https://jdsr.se/ojs/index.php/jdsr/article/download/125/89/1567 accessed 1 February 2025

secure election to Congress in 2022.[640] As of February 2025, the Federal Council of Medicine had doubled down in electing the same management that endorsed chloroquine during the pandemic, some of whom were investigated by the CPI da Covid.[641] Perhaps most emblematically, infectiologist Luana Araujo, who served merely nine days in the Ministry of Health before being dismissed for opposing hydroxychloroquine use, saw her social media followership skyrocket. She became a commentator on science, received prizes for woman leadership in science, and became a celebrity.[642]

The CPI's engagement with networked communication demonstrated three significant innovations in institutional adaptation. The investigation leveraged social media platforms to build public support and maintain pressure on network actors, establishing new modes of institutional legitimacy through digital engagement. It revealed the necessity for evolved accountability mechanisms in networked environments, as traditional oversight focused on individual responsibility proved insufficient against systematically diffused accountability. Most significantly, the investigation's lasting impact stemmed from its role in documenting and exposing the anti-scientific network's operations, providing crucial evidence for rebuilding institutional credibility.

The Brazilian case demonstrates how networked disinformation undermines public health and democratic governance. However, these challenges are not unique to

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[640] Igor Mello and Rodolfo Vicentini, 'Pazuello, ex-ministro da Saúde, é eleito deputado no RJ; Queiroz fracassa' (UOL Notícias, 2 October 2022) https://noticias.uol.com.br/eleicoes/2022/10/02/pazuello-ex-ministro-da-saude-e-eleito-deputado-no-rj-queiroz-fracassa.htm accessed 1 February 2025

[641] Paula Ferreira, 'Quem é Mauro Ribeiro, presidente do CFM que assinou parecer liberando prescrição de cloroquina e entrou na lista de indiciados pela CPI da Covid' (*O Globo*, 1 de novembro de 2021) https://oglobo.globo.com/saude/quem-mauro-ribeiro-presidente-do-cfm-que-assinou-parecer-liberando-prescricao-de-cloroquina-entrou-na-lista-de-indiciados-pela-cpi-da-covid-25258202 acessado em 12 de março de 2025.

[642] As of 01 February 2025, her Instagram account displays 336,000 followers, has photos of her regularly commenting in the national news, attends important social events.

Brazil. Similar patterns are emerging worldwide, where anti-scientific networks exploit digital platforms to challenge institutional authority. To understand these broader implications, the next Section examines how platform control, disputes over approving new regulatory models, and networked power affect democracies globally.

By strategically adopting networked communication practices, the investigation demonstrated how democratic institutions, such as SUS, can harness informal networks for 'communication power' while sustaining their formal authority. This institutional adaptation reflects Castells' idea of the 'networked state', where traditional governance structures increasingly operate through networked forms of communication to maintain their legitimacy. On the other hand, the power that individuals amass through increased exposure and social medial followership speaks to the trend of mediatisation or politics and the impact of mass self-communication.

In fact, the elevation of scientific communicators like Natalia Pasternak and the political ascension of figures like Senator Randolfe Rodrigues demonstrate how scientific and political authority were jointly reconstructed through networked engagement. Scientists are not immune to these processes of communication and must also mobilise visibility to convince the broader public of scientific facts, where co-production performed between social epistemologies and scientific methods operates differently when the public has direct access to scientific experts and participate in the discussions. This adaptation speaks to Jasanoff's concept of civic epistemologies, showing how the frameworks through which public knowledge is validated are themselves transformed by networked communication.

The investigation's innovative approach to accountability reflects the theoretical synthesis this thesis advances between Castells' network theory and Jasanoff's framework. Traditional oversight mechanisms, designed for hierarchical institutional

structures, proved insufficient against networks that systematically diffuse responsibility. The CPI's response—documenting network structures while engaging itself with citizens through networked communication—demonstrates how democratic institutions must simultaneously operate within and resist networked forms of power.

10.3.3 What the CPI da Covid means for Brazil's Political and Institutional Context

The effectiveness of the anti-scientific network in paralysing Brazil's public health response raises crucial questions about institutional accountability in networked environments. While democratic institutions typically rely on clear lines of responsibility and formal oversight mechanisms, networks can create what this thesis terms 'accountability gaps' - spaces where influence can be maintained while responsibility is systematically diffused. This suggests that strengthening democratic institutions requires rethinking how accountability operates in digital contexts where authority and responsibility can be strategically separated.

For public health systems specifically, this research highlights the critical importance of protecting scientific legitimacy and maintaining public trust. Brazil's experience demonstrates that robust institutional design alone cannot guarantee evidence-based policymaking when faced with networked opposition that can effectively manipulate scientific authority. Future public health responses must develop strategies for maintaining scientific credibility while countering attempts to reconstruct what counts as valid evidence and expertise.

The findings also point to the complex and yet still not fully understood role of social media platforms in modern democratic governance. While platforms enabled the

anti-scientific network to bypass traditional institutional gatekeepers, they also provided spaces for democratic resistance through counterpower.

This suggests that addressing networked challenges to democratic governance requires moving beyond simple content moderation[643] approaches. While removing false information may be necessary, it is insufficient when networks can systematically reconstruct the frameworks through which knowledge is validated and deployed. Instead, democratic institutions must develop more sophisticated responses that protect scientific legitimacy while adapting to networked forms of communication.

The implications extend to questions of platform regulation and democratic oversight. Brazil's experience suggests that protecting democratic institutions requires addressing not just the spread of false information, but the structural features of digital platforms that enable networks to bypass institutional authority while maintaining legitimacy. This involves new regulatory frameworks that ensure greater governance of technology platforms, such as ensuring regulatory oversight, algorithmic transparency, and accountability. Such themes are currently discussed in many Bills in Congress, mainly the Platform Regulation Bill (PL 2630/2020) and the AI Regulation Bill (2338/2023).

Ultimately, these findings suggest that preserving democratic governance in digital societies requires fundamental rethinking of how institutions maintain their authority and legitimacy. Unlike Habermas' discourse ethics and public sphere models, mentioned in earlier Chapters, which emphasise formal procedures and clear lines of

[643] Defined as 'governance mechanisms that structure participation in a community to facilitate cooperation and prevent abuse' in Grimmelmann J (2015) The virtues of moderation. *Yale Journal of Law & Technology* 17: 42.

accountability, networked mobilisation operates through more fluid forms of power that can effectively resist institutional control while maintaining scientific appearance.

Beyond Brazil's borders, the problem appears to be global. For example, the recently elected Trump administration in the USA is doubling down on science rejection, nominating Robert F. Kennedy Jr. for the Center for Disease Control (CDC). He notoriously has propagated numerous conspiracy theories such as Lyman's disease being a bio-engineering weapon, vaccines harming kids, and many others.[644] Recent academic production already models the epidemic spread based on the exposure to health misinformation.[645] in It is useful to reflect on how these findings can be transposed to look at other countries, which I will discuss in the following Section.

10.4 Looking Outward: Broader Implications of this Study for Democracies around the Globe

The Brazilian case illustrates how networked power reshapes democratic governance by controlling digital infrastructure. Castells' theory of communication power positions media and internet corporations as active agents in the production and reproduction of power, explaining how networks can successfully challenge institutional authority.[646] His framework demonstrates how power increasingly operates through the capacity to shape public discourse within communication networks, fundamentally

[644] Meidas+, 'Viruses Are Our Friend'—10 Off the Wall Video Clips from RFK Jr. Resurface on Bluesky' (15 November 2024) https://www.meidasplus.com/p/viruses-are-our-friend-10-off-the accessed 1 February 2025.

[645] DeVerna MR, Pierri F, Ahn Y-Y, Fortunato S, Flammini A and Menczer F, 'Modeling the Amplification of Epidemic Spread by Individuals Exposed to Misinformation on Social Media' (2025) 2 *npj Complexity* 11 https://www.nature.com/articles/s44260-025-00038-y accessed 4 April 2025

[646] Castells (n 52)

transforming how scientific legitimacy is constructed and maintained in democratic societies.

This transformation reflects what Castells identifies as the increasing entanglement of political power with mass communication logic. Political actors, policymakers, and institutions now depend fundamentally on their ability to construct persuasive narratives within the constraints of media visibility. This dependency often privileges spectacle over substantive debate, as demonstrated by the anti-scientific network's success in Brazil. Rather than engaging with established scientific evidence, the network effectively reconstructed frameworks of scientific authority through strategic use of digital platforms and media narratives.

The concentration of media ownership further intensifies these dynamics. Castells argues that corporate control over communication infrastructure narrows the spectrum of visible perspectives and entrenches elite discourses through vertical and horizontal integration. These corporations develop symbiotic relationships with political and economic elites, reinforcing existing power asymmetries. Traditional regulatory frameworks designed to safeguard media plurality increasingly falter against corporate lobbying and political capture, consolidating the dominance of key actors in the communication space.

We witness today that digital platforms have fundamentally altered this landscape by creating new concentrations of power that transcend traditional institutional boundaries. Whilst enabling alternative voices to bypass established gatekeepers, platforms like Google, Meta, and X simultaneously consolidated unprecedented control over the digital public sphere through algorithmic curation, surveillance capitalism, and

data commodification.[647] Unlike traditional media's editorial gatekeeping, these platforms govern public discourse through opaque algorithmic mechanisms that resist conventional accountability measures.

This technological restructuring of power creates complex dynamics between state authority and corporate control. States increasingly pressure technology companies to moderate content, censor voices, and enable surveillance, while these companies position themselves as defenders of digital rights, including free speech. We see today that these platforms are far from neutral, and that they are not merely an inert space where people exchange ideas.[648] For these reasons, states have tightened their grip on corporations and, in turn, corporations have also sought to insert their interests into politics and public debate. Hence, the power of digital infrastructures presents fundamental challenges for democratic accountability, as decisions shaping the informational environment increasingly emerge from unaccountable, commercially motivated entities.

The Brazilian experience demonstrates how these dynamics extend beyond national borders, serving as proxies for international power disputes and questions of digital sovereignty. The anti-scientific network's success in paralysing public health institutions raises crucial questions about platform governance: how should content moderation operate, what relationship should exist between platforms and state authority, and what safeguards must be established to protect democratic processes? These questions become particularly urgent when considering how platforms might

[647] A Makanadar, 'Digital surveillance capitalism and cities: data, democracy and activism' (Comment, Humanities & Social Sciences Communications, 2024) DOI: 10.1057/s41599-024-03941-2.

[648] Blake Hallinan, Rebecca Scharlach and Limor Shifman, 'Beyond Neutrality: Conceptualizing Platform Values' (2022) 32 Communication Theory 201 https://doi.org/10.1093/ct/qtab008 accessed 26 July 2025.

deliberately collaborate with networks to undermine institutional authority, as the following analysis of recent international developments will discuss.

10.4.1 Platform Ownership as Networked Power: The Musk-STF Dispute

The Musk-STF dispute exemplifies a broader transformation in democratic governance: platform ownership has become a direct mechanism of political power, as the underpinning media for communication and networks. Unlike traditional media, where state and regulatory oversight have been established through time, digital platforms operate as 'sovereign' information ecosystems—governing public discourse and determining the visibility of its users.[649] Their architecture and governance fundamentally shape the networks that operate on their services. This case reveals how platform control extends beyond content moderation to the fundamental reorganisation of state-platform relations, raising urgent questions about the balance between corporate power and democratic accountability.

The dispute emerged from Brazil's ongoing struggle with networked challenges to institutional authority, connecting directly to the dynamics observed during the Pandemic. As supporters of former President Bolsonaro used social media platforms to advocate for military intervention and discredit electoral processes, the Superior Electoral Court (TSE) and Supreme Federal Court (STF) attempted to assert institutional control through content moderation requirements under the Brazilian

[649] Lindsay Sain Jones and Tim R. Samples, 'On the Systemic Importance of Digital Platforms' (2023) 25 *University of Pennsylvania Journal of Business Law* 141 https://scholarship.law.upenn.edu/jbl/vol25/iss1/5/ accessed 12 March 2025.

Internet Rights Bill (Law 12.965/2014).[650] This regulatory approach reflected traditional assumptions about institutional capacity to govern digital spaces through legal frameworks.

Musk's acquisition of Twitter (now X) in late 2022 transformed this dynamic by consolidating platform control and communication power in a single actor. His 'absolutist' interpretation of free speech served to systematically reconstruct the framework through which legitimate authority over digital communication is understood.[651] Through strategic use of the platform—conducting livestreams with Bolsonaro, amplifying supporter content, and selectively publishing information—Musk demonstrated how platform ownership enables the creation of alternative frameworks of legitimacy that resist institutional oversight.

The technological dimension of this resistance reveals how platform control creates accountability gaps. When faced with STF orders to remove content challenging electoral integrity, Musk employed multiple layers of technological resistance: removing X's Brazilian assets, dismissing local staff, and implementing network-layer technical measures to evade access blocking. This infrastructure-level resistance demonstrates how platform control enables systematic challenges to institutional authority that extend beyond content moderation to the fundamental mechanisms of state power.

Though the immediate dispute ended when the STF seized assets from Musk's Starlink operation in Brazil, the case reveals broader implications for democratic governance in digital societies. In fact, a lasting concern is that, if Starlink's satellite

[650] Caio Machado, 'O conflito entre Elon Musk e o Supremo Tribunal Brasileiro: urgência na regulação das redes sociais' (Agenda Estado de Derecho, 13 November 2024) https://agendaestadodederecho.com/conflito-entre-elon-musk-e-o-supremo-tribunal-brasileiro/ accessed 1 February 2025.

[651] Hale, 'Why is Elon Musk feuding with Australia and Brazil over free speech?,' Al Jazeera, 26 April 2024 https://www.aljazeera.com/economy/2024/4/26/why-is-elon-musk-feuding-with-australia-and-brazil-over-free-speech accessed 26 July 2025.

network were sufficiently developed, it would not need to have assets in Brazil and would be immune from the state's coercion. Platform owners can simultaneously shape political discourse within a country while potentially remaining immune to institutional coercion through technological means. This capacity to influence politics while evading oversight exemplifies what Castells identifies as the fusion of corporate and state power in digital infrastructures, creating new vulnerabilities in democratic systems.

With the new Trump administration, where billionaire owners of technology companies are at the front stage of politics, the term 'tech oligarchy'[652] reflects more than conventional corporate power—it represents a fundamental transformation in how authority operates in networked societies. Platform owners' ability to reconstruct frameworks of legitimate authority while controlling the technological infrastructure of public discourse presents unprecedented challenges for democratic institutions. This evolution of networked power suggests that protecting democratic governance requires new approaches that address both the technological and discursive dimensions of platform control.

The Musk-STF dispute thus exemplifies how networked challenges to institutional authority have evolved beyond the dynamics observed during the pandemic. Where the anti-scientific network operated primarily through discursive means to reconstruct scientific authority, platform ownership enables more comprehensive challenges to institutional power through control of the fundamental infrastructure of public discourse. This transformation raises crucial questions about how democratic institutions can maintain effectiveness in an environment where both the means of

[652] Associated Press, 'As Biden warns of an 'oligarchy,' Trump will be flanked by tech billionaires at his inauguration' (16 January 2025) https://apnews.com/article/oligarchy-musk-bezos-zuckerberg-trump-biden-altman-putin-3ade224cccfb287f7fadaeac42b76e3d accessed 1 February 2025.

communication and the frameworks of legitimate authority are increasingly controlled by unaccountable private actors.

10.4.2 Platform Governance and the Reconstruction of Authority

The struggle over platform governance in the United States reveals how control over digital infrastructure offers important means of shaping the public sphere and, ultimately, reshaping the frameworks for validating knowledge and exercising authority. The ongoing debate surrounding Section 230 of the Communications Decency Act exemplifies this dynamic, as competing interpretations reflect fundamentally different conceptions of how authority should operate in networked societies. Whilst the Trump administration framed platform governance as 'ideological censorship' arguing for unlimited speech,[653] the Biden administration approached it as a mechanism for maintaining epistemic integrity, meaning the ability to hamper misinformation and other harmful practices around information and trust. [654] These divergent perspectives reflect deeper tensions about how legitimate authority is established in digital spaces.

The January 2021 'deplatforming' of President Trump marked a critical shift in the discussion about how platforms control and shape public discourse.[655] The decision of major platforms to remove a sitting president demonstrated unprecedented power to determine participation in digital public spaces. Trump's subsequent creation of Truth

[653] Anshu Siripurapu, 'Trump and Section 230: What to Know' (Council on Foreign Relations, 2 December 2020) https://www.cfr.org/in-brief/trump-and-section-230-what-know accessed 1 February 2025.

[654] Rebecca Kern, 'White House renews call to "remove" Section 230 liability shield' (Politico, 8 September 2022) https://www.politico.com/news/2022/09/08/white-house-renews-call-to-remove-section-230-liability-shield-00055771 accessed 1 February 2025.

[655] National Post, 'Social media and free speech: Trump's deplatforming explained' (9 January 2021) https://nationalpost.com/news/world/social-media-and-free-speech-trumps-deplatforming-explained accessed 1 February 2025.

Social represented more than an alternative platform;[656] it constituted an attempt to establish parallel spaces for communicating with the broader public, sidestepping the current gatekeepers, and ultimately being able to broadcast his own views of the world and version of facts. This move signalled the critical relevance of controlling platforms to advance political agendas.

Musk's acquisition of Twitter was another step in a process of political approximation of platform governance, which ultimately spearheaded a swing in political views as the new Trump administration stepped in. Through algorithmic adjustments that amplified certain voices, especially Musk's,[657] while marginalising others, X demonstrated how technical control enables systematic reconstruction of what counts as legitimate discourse. Internal documents revealed how content moderation decisions increasingly reflected political rather than considerations about how facts are created, despite public claims of neutrality. This manipulation of platform infrastructure to legitimate or challenge authority parallels the mechanisms through which networks challenged institutional power during Brazil's pandemic response. As such, the practice of content moderation became the heart of the political disputes.

Meta followed suit. The company had some of the most stringent measures against disinformation, implementing fact-checking programmes, AI-driven content moderation, and partnerships with external organisations to curb false claims about public health, elections, and climate science. However, in 2023, Meta relaxed its prohibition on certain anti-scientific narratives, particularly around climate change

[656] Martin Pengelly, 'Donald Trump's social media app Truth Social launches on Apple Store' (*The Guardian*, 21 February 2022) https://www.theguardian.com/us-news/2022/feb/21/donald-trumps-social-media-app-truth-social-launches-on-apple-store accessed 12 March 2025.

[657] Jon Brodkin, 'Report: Musk had Twitter engineers boost his tweets after Biden got more views' (Ars Technica, 15 February 2023) https://arstechnica.com/tech-policy/2023/02/report-musk-had-twitter-engineers-boost-his-tweets-after-biden-got-more-views/ accessed 1 February 2025

scepticism and vaccine hesitancy, claiming that users should have greater freedom to engage with contested information.[658]

Despite intense criticism, in 2025 following a highly political announcement as Trump took office, Meta announced the termination of its third-party fact-checking programme in the United States in favour of a Community Notes system, a model inspired by X's model of fact-checking.[659] This shift from fact-checking to a crowdsourced approach to validating information on social media speaks to the findings of this thesis: on these platforms the validation of knowledge became driven by the network itself, and therefore also subjected to the network's programme, with the capacity to sidestep institutional constraints such as producing 'scientific' facts and pushing for ineffective drugs without approval of relevant government bodies.

These developments extend beyond content moderation to fundamental questions of state sovereignty and democratic governance. Platforms have become essential infrastructure for exercising state power, from law enforcement to implementing geopolitical decisions. For example, in seizing social media accounts of people who plotted a coup and incited civilians to overthrow the government, as was discussed above the Brazilian case, but also in following or executing orders, such as renaming the Gulf of Mexico to Gulf of America for the eyes of American users, as Google did.[660] This dual role—as both private services and quasi-governmental infrastructure—creates novel challenges for democratic oversight. The CPI da Covid

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[658] Brian Fung, 'Meta phased out Covid-19 content labels after finding they did little to combat misinformation' (CNN, 20 April 2023) https://www.cnn.com/2023/04/20/tech/meta-covid-misinformation-oversight-board/index.html accessed 1 February 2025.

[659] Rebecca Catalanello and Katie Sanders, 'Meta is ending its third-party fact-checking partnership with US partners. Here's how that program works.' (Poynter, 7 January 2025) https://www.poynter.org/fact-checking/2025/meta-ends-fact-checking-community-notes-facebook/ accessed 1 February 2025.

[660] Jordan Valinsky, 'Google Maps will change the Gulf of Mexico to the Gulf of America' (CNN, 28 January 2025) https://www.cnn.com/2025/01/28/tech/google-maps-gulf-of-mexico-america/index.html accessed 1 February 2025.

demonstrated how states might mobilise networks to counter disinformation, yet this approach raises complex questions about institutional autonomy and democratic accountability. Being so pervasive and so necessary, platforms play roles when countries exercise their sovereignty.

The intensifying struggle over platform governance, manifested in initiatives like the European Digital Services Act and EU AI Act, reflects growing recognition of how platform control enables systematic reconstruction of political authority. These regulatory frameworks attempt to address not merely content moderation but the fundamental mechanisms through which knowledge is validated and authority exercised in digital societies. Yet they must navigate a complex balance: asserting democratic control over technologies that increasingly define public life without reinforcing either corporate or state authoritarianism.

The Brazilian case reveals a critical vulnerability in modern regulatory frameworks, which are often designed to ensure the procedural integrity of institutions without adequately accounting for the external information environment that shapes their political viability. The formal procedures of CONITEC and the Ministry of Health were not officially rewritten, yet they were rendered impotent because a networked political campaign successfully delegitimised the scientific evidence upon which they depend. This highlights a regulatory paradox: institutions can follow their internal rules perfectly and still fail to produce evidence-based policy if the public and political pressure, shaped by networked disinformation, demands a different outcome.

This challenge calls for a new paradigm in democratic and scientific regulation, one that extends beyond institutional boundaries to address the governance of the digital public sphere itself. The ongoing global debates surrounding platform regulation, such as Europe's Digital Services Act and Brazil's own proposed Platform Regulation Bill (PL

2630/2020), represent nascent attempts to grapple with this reality. Such frameworks must move beyond content moderation to address the structural features of platforms that enable the rapid, coordinated construction of alternative realities. This includes questions of algorithmic transparency, the amplification of polarizing content, and the accountability of platform owners for the integrity of the public debate they host. Protecting democratic institutions and the scientific authority they rely on no longer depends solely on safeguarding internal procedures, but on establishing regulatory mechanisms that ensure the public sphere remains a space for good-faith deliberation rather than a battleground for networked manipulation.

10.5 Future Directions and Limits to the Research

This concluding Section examines how the theoretical and methodological scope of this research may inform future directions for studying networked challenges to democratic institutions. By analysing both the constraints that shaped this investigation and the promising pathways it reveals, we can better understand how to advance research on the systematic reconstruction of authority in networked societies.

The Section develops in three parts. First, it examines the methodological and theoretical scope that contextualised this study's findings, demonstrating how these constraints both enabled and limited our analysis of how networks challenge institutional authority. Second, it identifies promising directions for future research that build upon this thesis's theoretical synthesis while addressing its limitations. Finally, it concludes by summarizing the broader implications of this research for understanding how authority operates in increasingly networked democratic societies.

10.5.1 Limitations: Methodological and Theoretical Boundaries

This study's analytical scope, while enabling deep examination of how the anti-scientific network reconstructed scientific authority, which necessarily encompassed certain methodological and theoretical limitations. The reliance on CPI da Covid proceedings as primary source material provided rich insights into formal institutional interactions but limited our understanding of the inner workings of informal network dynamics as the analysis did not focal on social media patters and metrics. This constraint reflects a broader methodological challenge in studying networked power: formal investigations necessarily capture only the visible aspects of network operations, while crucial interactions often occur through private channels inaccessible to institutional oversight.

The theoretical framework, combining Castells' network analysis with Jasanoff's understanding of scientific authority, proved effective for examining institutional-level transformations. The method, however, has limited ability to analyse grassroots social dynamics, such as how in smaller groups and local authorities constructed their own understandings around Covid.[661] The focus on how networks systematically reconstruct notions of authority necessarily backgrounded questions about individual motivations and localised discourse practices.

Access constraints further shaped the research boundaries. Key network actors, notably former President Bolsonaro and several military generals, did not participate in the CPI proceedings, limiting our understanding of network coordination and decision-making processes. This limitation reflects broader challenges in studying networked resistance to institutional authority: central actors often remain beyond the reach of

[661] Cesarino (n 4)

formal investigation, requiring researchers to reconstruct network dynamics through indirect evidence.

The study's qualitative methodology, while providing deep insights into the functioning of the network, necessarily limited our ability to make quantitative claims about network reach and effectiveness. The combination of discourse analysis with network mapping revealed complex patterns in how networks challenge institutional authority but required careful interpretation of social and professional relationships through documented connections. These methodological choices reflected the study's focus on understanding how networks systematically reconstruct authority rather than measuring their quantitative impact.

These limitations, while constraining certain aspects of the analysis, ultimately enabled focused examination of how the anti-scientific network systematically challenged democratic institutions through reconstruction of scientific authority. They suggest productive directions for future research that could expand our understanding of networked challenges to institutional authority through complementary methodological and theoretical approaches.

10.5.2 Future Work: Advancing Research on Networked Challenges to Democratic Institutions

This research opens significant pathways for examining how networks systematically reconstruct authority in democratic societies. Future work must expand our understanding of these dynamics across different contexts while further developing more theoretical frameworks for analysing networked power.

Comparative research examining anti-scientific networks across different political and institutional settings would deepen our understanding of how networks reconstruct

frameworks of authority. For example, climate change denial presents particularly relevant cases for examining how networks systematically challenge scientific legitimacy across national boundaries. Such research would reveal how institutional arrangements and political cultures shape networks' capacity to reconstruct frameworks of authority, while identifying common patterns or variation in how networks resist institutional oversight.

Understanding institutional resilience to networked challenges represents another crucial research direction. This study has demonstrated how anti-scientific networks effectively undermine institutional authority, yet questions remain about how institutions rebuild legitimacy and restore capacity for evidence-based governance. Longitudinal research tracking post-pandemic institutional resilience would illuminate how democratic institutions might strengthen their resilience against networked challenges while adapting to increasingly networked forms of governance.

Building on this thesis's synthesis of Castells and Jasanoff, future research should develop theoretical approaches that capture how networks operate simultaneously through technological, social, and institutional domains. This theoretical development must account for how networks systematically reconstruct authority across different spheres of social life while resisting traditional forms of institutional oversight.

Platform governance emerges as a critical area requiring sustained research attention. While this thesis has demonstrated how platforms enable networks to bypass institutional safeguards, future work must examine how platform architectures themselves might be redesigned to protect democratic institutions while preserving legitimate public discourse. New research should address fundamental questions about how regulatory frameworks and choice architectures can enhance democratic oversight of digital platforms without reinforcing either corporate or state authoritarianism. Such

work must engage with both technical and governance dimensions of platform design, examining how different architectural choices affect networks' capacity to reconstruct frameworks of authority.

This research agenda extends beyond traditional disciplinary boundaries to examine fundamental questions about how authority operates in networked societies. By building on this thesis's theoretical and empirical contributions, future work can advance our understanding of how democratic institutions might adapt to increasingly sophisticated forms of networked power while maintaining their effectiveness in the network society.

10.5.3 Final synthesis

This thesis advances understanding of how anti-scientific networks systematically manipulate the informational environments within which democratic institutions operate through examination of Brazil's pandemic response. By analysing how the anti-scientific network influenced public health institutions while maintaining their formal procedures and legal authorities, this research reveals fundamental patterns in how networked power operates through environmental manipulation rather than structural transformation in contemporary democracies.

The network's success in influencing public health policy while preserving institutional frameworks demonstrates how environmental manipulation can compromise evidence-based governance without triggering traditional democratic safeguards. This manipulation operated not through institutional capture but through systematic distortion of the information ecosystems within which unchanged institutional procedures occurred. The network's capacity to maintain scientific appearance while systematically polluting informational environments reveals how

networked forms of power can effectively compromise democratic decision-making without direct institutional interference.

These revised sections maintain your theoretical contributions while providing the precision the examiners requested regarding environmental influence rather than institutional transformation. The changes preserve your analytical framework while clarifying that networks manipulate the contexts within which institutions operate rather than transforming institutional structures themselves.

The success of Brazil's anti-scientific network in paralysing public health institutions while maintaining scientific appearance demonstrates how traditional democratic safeguards can be systematically undermined through manipulation of scientific discourse. This manipulation operated not simply through spreading false information, but through the reconstruction of how scientific knowledge is validated and employed in policy decisions. The network's ability to simultaneously leverage and undermine institutional authority while creating accountability gaps that protected it from oversight reveals how networked forms of power can effectively resist traditional democratic controls.

These dynamics shed light on broader transformations in how authority operates in networked societies. When networks can bypass institutional gatekeepers while maintaining sufficient legitimacy to influence public policy, traditional mechanisms for ensuring evidence-based governance become increasingly vulnerable. The Brazilian case demonstrates that even robust democratic institutions, designed to integrate scientific expertise with public participation, can be effectively paralysed when networks systematically reconstruct the frameworks through which authority is established and maintained.

Yet this research also suggests potential paths forward. The CPI's strategic adaptation to network dynamics, particularly through social media engagement, demonstrates how democratic institutions might evolve to better resist networked challenges to their authority. This points toward what Castells describes as the emergence of the 'networked state' - where democratic institutions maintain their legitimacy not through isolation from network dynamics, but through a 'symbiotic' engagement with them.[662]

As networks increasingly shape how knowledge is validated and deployed in policy decisions, democratic institutions must develop new approaches for maintaining their effectiveness. The lessons from Brazil's experience become increasingly relevant. The challenge is not simply to combat false information but to move beyond traditional institutional designs and develop frameworks that can resist networked attempts to reconstruct authority while preserving democratic legitimacy.

As future crises emerge requiring coordinated social action based on scientific evidence, democratic institutions must find ways to maintain their effectiveness against increasingly sophisticated forms of networked opposition. This thesis reveals that democratic governance is no longer solely a matter of institutional resilience, but of navigating a transformed epistemic landscape. As anti-scientific networks systematically reconstruct the mechanisms of authority, governments, regulatory bodies, and civil society must move beyond reactive measures and develop strategies that address the structural vulnerabilities of networked governance. The failure to do so will not simply weaken public trust in science—it will entrench new forms of authority that operate beyond democratic oversight.

[662] Castells (n 52)

Appendix I

Deponents to the CPI da Pandemia Analysed

Name	**Position at time of CPI**
Luiz Henrique Mandetta	Ex-Minister of Health
Nelson Teich	Ex-Minister of Health
Fabio Wajngarten	Former head of Secom
Ernesto Araujo	Ex-Minister of Foreign Relations
Marcelo Queiroga	Health Minister
Eduardo Pazuello	Ex-Minister of Health
Antonio Barrra Torres	Director of ANVISA
Dimas Covas	Director of Instituto Butantan
Nise Yamaguchi	Immunologist
Mayra Pinheiro	Paediatrician and Secretary of Labour Management of Brazilian Ministry of Health
Luana Araujo	Infectologist and public health specialist. Nominated secretary to the Minister of Health for ten days.
Natalia Pasternak	Microbiologist
Claudio Meierovitch	Public Health Doctor
Rircardo Zimerman	Infectologist
Francisco Alves	Infectologist
Osmar Terra	Physician and Congressman
Pedro Hallal	Epidemiologist and coordinator of national Covid study
Jurema Werneck	Researcher at Amnesty International
Elton Chaves	Council of Municipal Secretaries of Health
Pedro Benedetto	CEO of Prevent Senior

Appendix II

Senators represented in the CPI da Pandemia and their affiliations

1) *Who's Who in the CPI da Pandemia?*

Main senators of the CPI and their Substitutes, indicating political alignment in relation to the Bolsonaro government.

This Table lists the 11 members and their replacements at the CPI, identifying their roles, political party, and political alignment in relation to the Government. The last row of the board explains how representatives from the Senate's Women's Bench came to unofficially occupy the 12th position in the Commission following an agreement prompted by their demand for gender representation among the 11 official positions.

Role in CPI, name, and party	**Political affiliation in the Senate (political coalition)**	**Deputies at the CPI**
President Omar Aziz (PSD0	Independent - Social Democratic Party (PSD)	Angelo Coronel (PSD).
Vice-president Randolfe Rodrigues (REDE)	Opposition – Bloc PDT (CIDADANIA, REDE, PDT)	Sen. Alessandro Vieira (CIDADANIA).
Rapporteur Renan Calheiros (MBD)	Independent - Bloc *United for Brazil* (MDB, PP, REPUBLICANOS)	Jader Barbalho (MDB) - and Flávio Bolsonaro (PATRIOTA), son of Jair Bolsonaro
Member Eduardo Braga (MDB)	Independent - Bloc *United for Brazil* (MDB, PP, REPUBLICANOS)	Jader Barbalho (MDB) and Flávio Bolsonaro (PATRIOTA), son of Jair Bolsonaro.
Member Tasso Jereissati (PSDB)	Opposition - *Bloc Together for Brazil* (PSDB, PSL, PODEMOS)	Sen. Marcos do Val (PODEMOS)
Member Otto Alencar (PSD)	Independent - Social Democratic Party (PSD)	Angelo Coronel (PSD).

Member Humberto Costa (PT)	Opposition - *Democratic Resistance Bloc* (PT, PROS)	Sen. Rogério Carvalho (PT).
Member Jorginho Mello (PL/SC)	Government - *Vanguard Bloc* (PSC, PL, DEM)	Sen. Fernando Bezerra Coelho
Member Eduardo Girão (Podemos)	Government - Bloc *Together for Brazil* (PSDB, PSL, PODEMOS)	Sen. Marcos do Val (PODEMOS)
Member Marcos Rogério (DEM)	Government - *Vanguard Bloc* (PSC, PL, DEM)	Sen. Fernando Bezerra Coelho
Member Luis Carlos Heinze (PP)	Government - Bloc *United for Brazil* (MDB, PP, REPUBLICANOS)	The substitute senators in his political group's party were Jader Barbalho (MDB) and Flávio Bolsonaro (PATRIOTA), son of Jair Bolsonaro.
12th non-official seat: Rotation among representatives of the Women's Bench	Rotative Seat[663]	Rotative seat

2) *For reference, list of Brazilian Political Parties at the Time*

Political Party	**Acronym**
Movimento Democrático Brasileiro	MDB
Partido dos Trabalhadores	PT
Partido Renovação Democrática	PRD
Partido da Social Democracia Brasileira	PSDB
Progressistas	PP
Partido Democrático Trabalhista	PDT

[663] The representatives of the Women's Bench were not official members of the Commission. They participated in the hearings and had a seat at the inquiries through an internal arrangement, after protesting due to the lack of available seats among the 18 senators. The Women's Bench took turns due to the restriction of one female senator per meeting. This rotation included Simone Tebet (MDB), the leader of the Women's Bench in the Senate, Eliziane Gama (Cidadania), Leila Barros (PSB), and Soraya Thronicke (PSL). Thronicke, at the time, belonged to the same party as President Jair Bolsonaro, while the others were either independent or in the opposition.

União Brasil	UNIÃO
Partido Liberal	PL
Podemos	PODE
Partido Socialista Brasileiro	PSB
Republicanos	Republicanos
Cidadania	Cidadania
Partido Social Democrático	PSD
Partido Comunista do Brasil	PCdoB
Solidariedade	Solidariedade
Partido Verde	PV
Partido Socialismo e Liberdade	PSOL
Avante	Avante
Mobilização Nacional	MOBILIZA
Agir	Agir
Democracia Cristã	DC
Partido Renovador Trabalhista Brasileiro	PRTB
Partido da Mulher Brasileira	PMB
Rede Sustentabilidade	REDE
Partido Novo	NOVO
Partido Socialista dos Trabalhadores Unificado	PSTU
Partido Comunista Brasileiro	PCB
Unidade Popular	UP
Partido da Causa Operária	PCO

Appendix III

Interview Materials

1) General Questionnaire for Interviews

QUESTION SHEET

The interviews will be semi-structured, intended to last from 30 to 60 minutes, depending on the availability of the interviewee. These will be directed to those who are part of the 'anti-science' public policy making network that advocated 'Early Treatment' drugs. There are four main axes of questions, which are outlined below with the relevant questions:

I) Mapping the Network

a. In your point of view, who were the main actors involved in deciding the Covid19 policy? Or who *should* have been heard?
b. Where was the information you were using coming from?
c. Who were the main oppositionist to your view?
d. Were there governmental actors that hindered your views from influencing public policy?

II) Construing of Science

a. How did you evaluate the health risk of Covid19 early in the pandemic? Did your views change at any point and why?
b. How did your perception of the effectiveness of the drugs change during time, if at all?
    i. Including the 'Early Treatment' drugs but also vaccines.
c. How did you perceive the risks in taking the 'Early Treatment' drug against other measures such as social distancing, usage of masks, and fostering herd immunity?

III) Information outlets and credibility

a. What online and offline sources of information do you consider reliable? Why?
b. Are there sources you consider to be spreading false information? Why?
c. Which authorities do you believe to push out reliable information?
d. Which modes do you use to obtain your information? With whom do you communicate mainly your views about effective covid public health measures?
e. Which modes do you use to coordinate with different actors and mobilise to support a given public policy? How does it work?
f. How did you employ your own social media or team to defend your views?

IV) Accountability and new forms of governance

a. Who should have a final say in which measures should be adhered to, each person individually or should there be an authority to make that decision?
b. How should the rapport between the public and the authorities occur?

c. The government is said to be heavily reliant on social media and to perform "direct report with the population". Has the relationship with the population really changed? If so, how and should it be any different?

2) Exploratory Question Bank for Interviews Specific Participants & Scripts

a) Interview Introduction Script (Translated to English)

Hello [Interviewee's Name],

Thank you for taking the time to speak with me today. I appreciate your willingness to participate in this interview and share your insights on this important topic.

Presentation

I'm a DPhil candidate at the University of Oxford, and my research examines how networked communication, particularly through social media, reshaped public trust in science and democratic institutions during Brazil's Covid-19 response. Specifically, I'm exploring how digital platforms facilitated the promotion of the 'Early Treatment' approach and how these dynamics challenged or supported institutional authority.

Purpose + Format

This interview is part of the data collection for my research, focusing on [interviewee's

relevance]. Your perspective will help deepen the analysis of how social media shaped public discourse and influenced institutional responses.

This will be a semi-structured interview, lasting about 30-60 minutes. I have prepared a set of guiding questions, but the format allows for flexibility. Please feel free to elaborate on any topic or bring up additional points you find relevant.

Confidentiality and Consent

Your responses will be kept confidential.

- If, at any point, you feel uncomfortable answering a question or wish to stop the interview, please let me know.
- With your permission, I would like to record this interview to ensure I accurately capture your thoughts. The recording will be securely stored and used solely for research purposes [share consent sheet + infos]

Do you have any questions or concerns before we begin?

b) Interview Questions for a Senator or head of staff

(Main Qs Highlighted)

Opening Questions: Background and Role

1. Can you describe your role in the CPI da Covid and how you contributed to the investigation?

On the CPI's Objectives and Processes

3. What were the primary objectives of the CPI from your perspective? Did those objectives evolve as the investigation progressed?
4. How did the CPI decide which witnesses or evidence to prioritise during its hearings?
5. In your view, what were the most significant challenges faced by the CPI in addressing the anti-scientific discourse?

On Social Media and Public Engagement

6. The CPI proceedings were widely broadcasted and discussed on social media. How important was this public visibility to the CPI's work?
7. Did you or your team actively use social media to amplify the CPI's findings or counter disinformation? If so, how?
8. How did you perceive the role of social media in shaping public opinion about the 'Early Treatment' discourse and the CPI itself?

On Disinformation and Scientific Authority

9. In the testimonies you heard, how did you assess the strategies used by the anti-scientific network to justify Early Treatment?

Institutional Dynamics and Accountability

11. What do you believe were the CPI's most impactful contributions to holding individuals and institutions accountable for their actions during the pandemic?
12. How did the CPI navigate the tension between institutional authority and the networked communication power of the anti-scientific discourse?
13. Were there moments where you felt institutional mechanisms, such as the SUS or ANVISA, were particularly undermined by disinformation? How did the CPI address these issues?

Closing Questions

16. Is there anything else you think is important to understand about the CPI's work that has not been widely discussed?
17. What lessons do you think other nations or institutions could learn from the CPI's approach to combating disinformation and addressing a public health crisis?

c) Questions for the Senator's Staff

On Preparations and Evidence Gathering

1. What was the process for gathering and verifying evidence presented during the CPI?
2. How did you decide which aspects of social media content were most relevant to include in the hearings?
3. Can you provide insight into the collaboration between different staff teams or external experts to support the CPI's work?

On Public Communications

4. How did the staff manage the CPI's public communications strategy, particularly on social media platforms?
5. Were there deliberate efforts to monitor and counteract disinformation circulating online about the CPI or its findings?

Reflection and Lessons

6. Are there recommendations you would make for future parliamentary investigations into disinformation or public health crises?

d) Interview Questions for Social Media Managers Supporting the CPI

Opening Questions: Background and Role

1. Can you describe your role in managing social media content related to the CPI da Covid?

2. What motivated you to use social media to support or amplify the CPI's findings?

3. What types of content did you focus on creating or sharing to support the investigations? (e.g., infographics, videos, live tweets)
4. Did you collaborate with others (e.g., journalists, activists, influencers, or organisations) to amplify the CPI's findings?

On Engagement and Public Reception

7. How did the public respond to your social media posts? Were there specific types of posts that gained more traction or engagement?
8. How did you ensure the accuracy and credibility of the information you shared?

On the Role of Social Media in the CPI

13. In your view, how important was social media in shaping public opinion about the CPI and its findings?
14. Do you think the visibility of the CPI on social media influenced its outcomes or public impact? How so?
15. Did you notice a change in how institutional actors, like senators or government officials, engaged with social media as the CPI progressed?

Reflections and Lessons

16. What do you think were the most effective tactics or strategies for using social media to support the CPI?
17. Were there moments where social media directly influenced the narrative around the CPI or specific investigations? Can you share an example?
18. Do you think there are risks associated with relying on social media for investigative support? If so, what are they?

Closing Questions

20. Is there anything else you think is important for me to understand about the role of social media in supporting the CPI or combating disinformation?
21. Looking ahead, how do you think social media can be better leveraged to support democratic processes and counter disinformation?

3) Sample Participant Sheet

Centre for Socio-Legal Studies

Law Faculty.

Social Sciences Building, Manor Road

Oxford, UK

Researcher: Caio Machado

Direct Line: +55 11 96920 6163.

Email: caio.machado@wolfson.ox.ac.uk

Supervisor Prof. Bettina Lange

DISINFORMATION IN BRAZIL'S COVID19 RESPONSE

PARTICIPANT INFORMATION SHEET

Ethics Approval Reference: **R82716/RE001**

What is the purpose of the study?

I, Caio Machado (University of Oxford), am investigating if and how disinformation on scientific facts and methods affected the Federal Government's response to the Covid19 pandemic between 2020 and 2021.

This research looks at the social practices, including individual and organisational actions and discourses, that were used to support a set of drugs ineffective for treating Covid19 in Brazil between 2020 and 2021. To do so, this project analyses how scientific evidence in relation to the drugs and treatments, also called "Early Treatment", were construed during the height of the Covid19 pandemic in the country. This exploratory research aims at understanding the ways in which the use of certain drug treatments was seen as justifiable or not as a valid Covid19 policy in Brazil. Within this process, it is also interesting to understand how social media enabled information flows that justified the actions of policymakers.

Please read through these terms before deciding if you'd like to participate. You may ask any questions before taking part by contacting the researcher (details below).

Why have I been invited?

I am looking to talk with high-level individuals who expressed views and positions that were somehow represented or rejected in the Covid19 response rolled out by the government.

What would I be asked to do if I took part?

The activity is limited to a thirty to sixty minutes semi-structured interview on certain views and positions regarding the decision-making process about the pandemic at that time. The interviews will be confidential, no quotes will be attributed to named individuals and no information will be released without the explicit consent of the participant.

Do I have to take part?

No. It is up to you whether or not you take part. You can ask questions about the research before deciding whether or not to participate. If you do agree to participate, you may withdraw yourself from the study at any time, without giving a reason, by advising the researcher of this decision. If you decide to withdraw from the study after you've already taken part, I will delete any information I have about you.

How will my data be used?

All your answers are strictly confidential, and all questions in this study are optional. No information offered here will be submitted to authorities or other third parties without your explicit knowledge and consent. You do not need to give information if you do not want to.

The information you provide as part of the study is the **research data**. Any research data from which you can be identified (e.g. your name, date of birth, video recording), is known as **personal data**. This includes more sensitive categories of personal data (**sensitive data**) such as information concerning your medical history. It does not include data where the identity has been removed (anonymous data).

All research data will be stored for at least 3 years after public release of the work of the research, such as through deposit of the doctorate in the Bodleian Library, and possible publications of articles arising from the work in academic journals. Audio recordings will also be stored on the University server, which is password protected and requires multi-factor authentication. These transcriptions will be kept in password-protected word documents on the University server.

However, you do not need to consent to this if you prefer not to have your words quoted. There will be an optional box below on the consent form that you can tick if you are happy to be quoted, which you can also revoke at any time.

The results of the study will be written up as a thesis. On successful submission of the thesis, it will be deposited both in print and online in the University archives, to facilitate its use in future research. The thesis will probably be published open access, meaning that it is available to every internet user. I also aim to publish the results in scientific journals, though this may be two or three years after the study has finished.

Who will have access to my data?

The University of Oxford is the data controller with respect to your personal data, and as such will determine how your personal data is used in the study. The University will process your personal data for the purpose of the research outlined above. Research is a task that we perform in the public interest. Further information about your rights with respect to your personal data is available from http://www.admin.ox.ac.uk/councilsec/compliance/gdpr/individualrights/.

Any personal information that could identify you will be removed before data are made public. No personal data will be shared. Any personal information that you choose to give in this study will be stored securely on the University server, will only be accessed by researchers directly involved in this project, and will be deleted three years after completion of the research.

What if there is a problem?

If you have a concern about any aspect of this project, please speak to the Caio Machado at the email address caio.machado@wolfson.ox.ac.uk or at [PHONE REDACTED FOR SUBMISSION]. I will acknowledge your concern within 10 working days and give you an indication of how I intend to handle your request. If you remain unhappy or wish to make a formal complaint, please contact the Chair of the Research Ethics Committee at the University of Oxford, who will seek to resolve the matter in a reasonably expeditious manner.

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11. Interviews

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