Just asking questions: can a far-right president turn agentic knowledge construction into political manipulation?

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Received 26 October 2022
Revised 7 March 2023
14 April 2023
19 May 2023
Accepted 19 May 2023

Abstract

Purpose – There are several connections between education and disinformation, including the association between years of schooling and vulnerability to unfounded hypothesizing. The purpose of this paper is to inquire into a competing explanation: political leaders might be exploring powerful teaching and learning strategies to disseminate agendas based on baseless assumptions, exploiting human's tendency to generate robust theories even with incomplete or incorrect information.

Design/methodology/approach – The authors analyzed ten videos published online by a highly partisan YouTube channel. The footage contained informal encounters between former Brazilian President Jair Bolsonaro and supporters in front of his official residence. The team sought to answer two research questions: Do Mr Bolsonaro's discursive moves include activators that lead the audience to understand that they are theorizing and reaching conclusions "on their own?" Does Mr Bolsonaro's audience follow those clues and mention politically motivated hoaxes and conspiracy theories in their comments? This paper draws on perspectives from the field of educational research to investigate the mechanisms used by the president to shape public opinion.

Findings – The authors found evidence of the employment of elements akin to classroom discourse in the dialogues led by Mr Bolsonaro. Specifically, different types of rhetorical questions are present to a substantial extent in the data subset analyzed for this paper.

Originality/value – This work offers an alternative perspective to analyzing disinformation. By drawing from established literature from education research, this paper departs from facile explanations that take for granted the lack of intelligence of the audience. Conversely, it argues that popular, if not powerful, teaching and learning strategies might play an undesired role by shaping individuals' cognitive processes to create robust, internally consistent theories about the world using flawed assumptions and incorrect "building blocks."

Keywords Constructivism, Disinformation, Theory building, Learning, Classroom discourse, Politics, Political discourse, Post-truth

Paper type Research paper

This article builds on work originally presented at the Annual Meeting of the American Educational Research Association, 2022. We thank the anonymous reviewers and session chair, Dr Tanner Vea, for their inestimable feedback on that presentation. We would like to thank Inara Sousa for her invaluable review of our data analysis and hours of discussion that led to a historicized and more robust interpretation of the dialogues and to Cleber Sant'Anna for his advice on the layout of dialogue charts. Thanks also to TLTLab Writing Group members Jacob Wolf, Leah Rosenbaum, Magnus Kaspersen, Marina Lemee, Tamar Fuhrmann and Yipu Zheng for their thorough review of early drafts of this manuscript and continuous support in everything we write. Finally, thanks to editor Dr Rebecca Reynolds and two anonymous reviewers, whose feedback was critical to the enrichment of this work.

Funding: This work was supported by funds made available by the Institute for Latin American Studies (ILAS) at Columbia University and the Lemann Center for Brazilian Studies at Columbia University through their Faculty-Student Collaboration Grant.

Information and Learning Sciences

2398-5348
DOI 10.1108/ILS-10-2022-0118

1. Introduction and background

Tyack and Cuban (1997) aptly stated that "public schools have long been a favorite way of improving not just education but society. [. . .] Educational elites saw themselves as expert social engineers who could perfect the nation by consciously directing the evolution of society" (p. 2). In other words, they conclude that when societies are faced with challenging problems, a standard solution of educational elites is to prescribe "more education" on a given topic and transfer to educational institutions (chiefly public schools) the responsibility to fix the issue. Schools' centrality as the primary *locus* of learning in modern Western societies might help explain why, in our current disinformation crisis, many believe that the problem, again, is lack of education and that if we increase years or the quality of schooling, citizens will be able to see through "fake news" and fight disinformation. Indeed, in the "post-truth world," researchers have pointed out that schools struggle to prepare individuals to reason adequately in epistemically unfriendly environments (Chinn, Barzilai and Duncan, 2021), where facts seem open to interpretation based on different political agendas and epistemologies. While educators and scholars argue over how schools should prepare students to deal with disinformation (McGrew *et al.*, 2017; Barzilai and Chinn, 2020), unwarranted claims spread as fast as ever, limiting public health responses, justifying international aggression, and – notably in the context of this paper – influencing elections and national public policy. Considering Tyack's and Cuban's warning, it seems apt to doubt that schools alone will fix disinformation, or that the answer to it is to find a miraculous teaching strategy or curriculum that will, once and for all, enable students to see through it. However, schools could be part of the solution, and educational research can inform the creation of strategies to deal with disinformation, defined here as "information that is deliberately false or misleading" (Jack, 2017).

Our skepticism on the potential of formal education in fighting misinformation stems from a counterintuitive premise based on data from Brazil: *there is no evidence that individuals with higher levels of education will be less susceptible to support public figures who base their discourse on unwarranted information.* On the contrary, polls indicate that people with the most years of education are the group with the highest support rates for Brazilian chief of State Jair Bolsonaro (Poder 360, 2022). The former president made 6,685 distorted or fake statements in his 1459 days in office (Freitas *et al.*, 2022). He was also known to have had publications excluded from YouTube and Facebook due to failure to comply with standards on misinformation (Collier, 2020). These facts, thus, shed light on the questionable causality claim between "more" education and less belief in disinformation.

Another factor that guides our research is that the very basis of the strategy of many disinformation groups seems to be, ironically, to tell people to "go and learn by themselves," using all sorts of publicly available materials, instead of simply delivering a prepackaged set of facts or political messages – even using the now-famous motto "do your own research" (DYOR). In other words, *incentivizing people to learn by themselves (a mainstay of progressive education) became a core procedure used by strategists of disinformation* campaigns (this point is further elaborated in the next section).

Our third fundamental conjecture is founded on reports on how challenging it is to convince people to change their minds about a topic after initial exposure to inaccurate information, even when the content is blatantly false (see, for example, Pennycook *et al.*, 2018). Assuming this is the case, as any constructivist would perfectly understand, *simply presenting straight facts to an audience will rarely change their opinion because they are deeply entrenched in their beliefs and (naïve) theories.* That is, it is unlikely that a schooling model that privileges instructional methods based on "exposure to facts" will be enough to

prepare individuals to tell apart facts from fake stories. Smith *et al.* (1994) present a comprehensive argument against the "theory theory" assumption that misconceptions can be "replaced" by concepts backed by scientific evidence. Their argument is based on evidence that misconceptions are not monolithic conceptual blocks but, instead, ecosystems of understandings that interact to form conceptual systems. Some of those understandings are not compatible with conceptualization developed – and comprehended – by experts, but they are originated in learners' lived experiences. Therefore, those understandings are strongly contingent on sociocultural contexts. Finally, scholarship on semiotics has also situated "truth" within sociocultural contexts associated with the development of language and discourse (Blikstein, 2003). As Keane (2018) argues, "signs in human worlds are inherently contestable and subject to historical transformation."

Bearing those conjectures in mind, our research tries to reframe disinformation from mere transmission of factoids to *a set of educational and discursive strategies that are, in fact, and unfortunately, achieving a goal that progressive educators have pursued and prescribed for decades, with a twist: enticing learners to do their own research and develop skepticism so that they can build their knowledge.* The twist comes in two factors:

(1) possibly, the "instruction" starts with fabricated truths or cherry-picked examples that direct citizens to an epistemic path that ends in highly biased conjectures; and

(2) the skepticism is directed toward a carefully selected set of "authoritative" sources, enabling control over which narratives are to be trusted or not, thus putting learners on a predictable trajectory that might seem, to them, to be of their own choice.

These trajectories end in robust theory building about current political affairs – which, exactly because the learner was "in charge," are extremely hard to change.

As seen above, we identify multiple links between mis/disinformation and education, and, in this paper, we focus on one specifically: the mechanisms people use in sensemaking and knowledge building – as described by constructivist theory – and its connections with ways in which individuals interact with political leaders who take active roles in communicating messages that are part of their disinformation agendas.

1.1 Politics and disinformation in Brazil

Polarization and hyperpartisanship have been part of Brazilian politics in recent years. As we write, the country has recently witnessed an explicit display of that. A few thousand antidemocracy rioters undertook a violent siege to the head offices of Brazil's three administrative branches (Nicas and Spigariol, 2023). The association between those riots and misinformation campaigns is under investigation by researchers and government officials (Frenkel, 2023), and there is evidence that rioters have been exposed to false information about the integrity of the country's electoral system and, particularly, the electronic ballots. The January 8th, 2023 siege of Brasília seems to be the pinnacle of an ongoing mobilization fueled by a well-managed disinformation operation.

Especially since the 2018 national election, there have been growing efforts to document and understand the connections between hyperpartisanship, polarization and disinformation. For example, Soares and Recuero (2021) found evidence of "hashtag wars" in that election. Their data show that hyperpartisan outlets put forth alternative

framing to facts. In an orchestrated operation, radicalized opinion leaders disseminated that content, to which polarized right-wing groups had substantially more exposure than that generated by mainstream media.

That same election was won by then-congressman in his 7th mandate, Jair Bolsonaro. His supporters ran massive defamation campaigns against runner-up Fernando Haddad, endorsed by former President Lula da Silva. False messages included alerts against Mr Haddad's intention to distribute penis-shaped baby bottles in schools as part of a sex education project (Lopes-Wilke, 2019). Another target was journalist Patrícia Campos Mello, who published a series in the mainstream newspaper Folha de São Paulo reporting the industry-scale disinformation operation illegally funded by businesspeople who supported Mr Bolsonaro (Mello, 2018).

Indeed, polarizing campaigns using disinformation can be traced back to at least mobilizations that occurred from 2014 to 2016, led on many fronts by alt-right groups (Nemer, 2022). But, by the 2018 elections, Nemer reports, the Bolsonaro campaign had created a sophisticated infrastructure substantiated by a network of WhatsApp groups that was used to distribute "homemade misinformation and pro-Bolsonaro memes and videos." Content included distorted, out-of-context, or plainly false information, such as allegations that the Ku Klux Klan was associated with the left wing-leaning Workers' Party. Unlike algorithm-supported filter bubbles (Pariser, 2011), that infrastructure relied on exchanges of messages between users who fit three definitions – the "average Brazilian," the "Bolso-army" and the influencers.

It is possible to identify similarities between elements in that context with Philips and Milner's (2021) analysis of information ecosystems. In analyzing those systems, the authors point to imperfections in currently prevalent approaches to dealing with disinformation, highlighting their individualistic aspects. The alternative they propose relies on an "ecological" approach that borrows from biology the concept of "biomass pyramid," on top of which are apex predators – analogously, propagandists and high-profile politicians. Similarly, as we go down the pyramid, different species prey or get preyed on – in networked information systems, those lower levels are populated by decreasingly influential and increasingly numerous individuals. We transfer that notion to the Brazilian context and draw on Nemer's evaluation of behavior within Bolsonarist WhatsApp groups to identify similar ecosystem dynamics. There are clearly "predators" (influencers) close to the apex of the pyramid (the campaign coordination), who fed the groups' viral content. Closer to the "base" are seemingly the "average Brazilian," the majority who locally redistributed content among relatives and friends using smaller Whatsapp groups. Nemer's analysis of those WhatsApp groups also reveals that they gradually became echo chambers (Fletcher, 2020) where divergent points of view were silenced, despite users' perspective that the groups functioned as sources of information used for political position-taking.

As seen in this subsection, the information ecosystem in Brazil features deep connections between disinformation and politics, illustrated by how a powerful political group makes use of networks designed to advance controversial agendas based on disinformation. Our analysis explores how a player in that ecosystem interacts with disproportionately weaker participants. Drawing on Philips and Milner's definition, Mr Bolsonaro would be an apex predator and his followers, prey. *Our interest lies in the verbal aspects of that interaction that would enable the "prey" to engage in seemingly agentic knowledge construction, the topic of the next subsection and a hypothesis that pervades our lens for analysis.*

1.2 Agentic construction of knowledge based on disinformation

Common sense might suggest that if we learn the "facts," disinformation will go away. This tendency became apparent in the aftermath of the 2016 elections in the USA, whose results were seen by many as caused by "people being misled" into their electoral choice (Zuckerman *et al.*, 2021). However, the current scenario poses a more nuanced challenge, illustrated by the meaning of the term "post-truth." The expression is used to describe age-old strategies that have been used by fascist leaders and find a parallel in the Orwellian "doublethink" that dates back decades ago (Snyder, 2021). In this article, we use "post-truth" in a manner similar to that present in Buckingham (2019) and Barzilai and Chinn (2020), a critical and slightly sarcastic term that captures the essence of communication performed by some political actors who purposefully replace facts with claims that are most convenient to their agendas. Nowadays, citizens claim their right to be skeptical about virtually everything, from the number of attendees at a presidential inauguration to the shape of the Earth, sometimes even discounting photographic evidence: battling disinformation seems to go beyond simply "learning the facts." We hypothesize that, although learning about facts is at the core of the issue, the conundrum includes a debatably *problematic use of research-backed strategies that have been proven effective in facilitating learning*. Perhaps people are actually learning things that become *facts for them,* and they are doing so through successful pedagogical strategies. We argue that some political actors use such methods in their messaging as a call to action for their followers toward, ironically, *agentic* construction of knowledge.

Studies on the spread of disinformation have identified rhetorical strategies that encourage laypeople to take a critical stance toward the discourse of scientists and mainstream media. Hughes *et al.* (2021), for example, identified that "do your own research" has been used as a motto by groups that deny the efficacy of anti-COVID vaccines. That motto, DYOR, has also been associated with mistrust on Instagram posts tagged with #hoax (Quinn *et al.*, 2021). Even as we write this paper, tweets related to the ongoing Russian invasion of Ukraine prompt followers to DYOR, suggesting that the war is actually a campaign to destroy science labs that would "unleash bioweapons in the world" (Figure 1) were it not for Russian intervention.

This emphasis on DYOR prompts two significant questions: First, *how* are individuals doing their research? Conventionally, mainstream media and science were trusted sources to keep up to date on world affairs. However, trust in mainstream media has declined, and various studies point out a global tendency of mistrust in sources that once were synonymous with the truth (see, for example, Zimmermann and Kohring, 2020; Wynne, 2006). As mainstream media loses its status as a source of the truth, other sources fill the gap. This leads to a second question: *who* facilitates individuals' learning processes? It may be that different actors play a significant role in pointing citizens to sources of information that those actors find effective for their own goals. We argue that political leaders might use this strategy to establish themselves as sources of truth for a growing base of followers.

A recent study on political sensemaking among conservative groups in the USA has found evidence that might bridge these two questions (Tripodi, 2018). In that case, a religious leader encouraged his congregation to inquire about bills word-by-word in a manner that resembled Bible interpretation practices. In the case presented, that priest recommended that followers "do their own research" and evaluate how political decisions could affect their everyday lives. Those topics, he argued, were too important to be filtered by the media. In the case portrayed, the priest (a figure of authority) *promotes a critical stance toward media discourse* and, at the same time, works to shape the *epistemic*

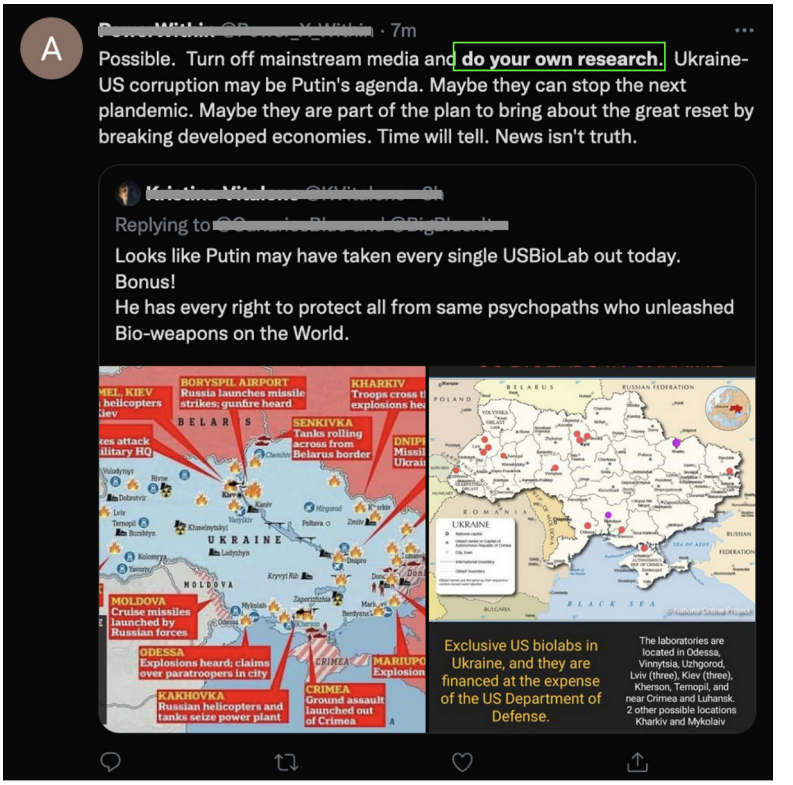

Figure 1.
A Twitter user encourages followers to "do their own research"

Source: Twitter. Figure by authors, edited to anonymize Twitter profiles

processes that guide that criticality. We understand that other political actors might be using an analogous strategy.

1.3 From local to national politics

That priest's over-skeptical attitude toward media finds parallels in national political leaders. For example, commonalities between US former President Donald Trump and Brazil's Jair Bolsonaro include attacks on the free press and science. Trump's attitude has been identified as "institutional distrust," a concerted effort to undermine the legitimacy of the free press in the country and justify continuous aggression, placing Trump and segments of the population on the same side of a battle against disinformation propagated by commercial media conglomerates (Robinson, 2018). In Brazil, former President Jair Bolsonaro uses a similar strategy in his attacks on the press (Feres Júnior and Gagliardi, 2021). Since his presidential campaign, mainstream media constituted one of his favorite targets, and multiple scenes of physical violence against journalists were registered during the 2018 elections (Daly, 2019). Not surprisingly, Bolsonaro maintains active social media and instant messaging channels, in which he directs followers to "reliable" news sources that include hyperpartisan outlets. Both cases (Trump and Bolsonaro) seem to point to a

tendency: *political leaders nurturing mistrust in conventional news providers while encouraging people to "do their own research."*

Previous research has also demonstrated that online, alt-right agitators recruit followers by exploring epistemic practices that resemble critical thinking (Marwick and Partin, 2020; Lewis and Marwick, 2017; Boyd, 2018). Those epistemic practices might not attend to power relations that are present in all media artifacts. For example, QAnon followers are encouraged to uncover the hidden agenda of mainstream media and to engage in challenges that follow a well-defined research agenda: they follow "crumbs" (clues) to "bake" knowledge that acquires a canonical status in the community (Marwick and Partin, 2022). *That strategy may cause a distorted process of knowledge construction that creates an ecosystem of "alternative facts,"* which might be used to advance controversial political agendas. *It also leads to the impression of personal empowerment and that knowledge is actively being constructed by political followers.*

As seen above, there is an overlap between a strategy used by groups that contribute to the spread of disinformation ("do your own research") and those taken by controversial politicians in their communication efforts. What remains underspecified, however, are the learning processes that begin with "do your own research" and result in disinformation. We believe that "do your own research" might be a misnomer – what is meant, actually, is "do your own learning." We thus want to establish a link between research in the Learning Sciences and disinformation. Although we use public speech as our primary data set, our focus diverts from discourse analysis, using a lens of learning and *knowledge construction*. Our primary objective with this study is to investigate how constructivist and socio-constructivist perspectives on knowledge construction can help us understand discursive strategies a political leader uses to persuade his followership. While we acknowledge that the generation of discourses and learning are separate phenomena, they are intertwined in important ways in this context. That is illustrated by decades of investigation on classroom discourse and questioning as a teaching strategy, and the relevance of those approaches for learning outcomes (Buggey, 1972; Wilen, 1991; Roehler and Cantlon, 1997; Walsh and Li, 2013).

This paper builds on a current research agenda (Russo *et al.*, 2021; Russo and Blikstein, 2022) that analyzes dialogues of a political leader through a lens of theory building informed by constructivism. After situating the paper in the context of current affairs and disinformation, the following section describes the constructivist perspective on learning that informs our analysis. Next, we introduce and justify our methods and data sources. Then, we present the results showing three examples of dialogues to support our findings. After that, we summarize the results and refer back to our hypotheses. Finally, we conclude with a reflection on the contributions of this paper to our understanding of disinformation and its connections with the learning sciences.

2. Theoretical frameworks and research questions

2.1 Ideology in pieces and theory building in the social sciences

There has been extensive research on theory building in natural sciences education. Well-studied "epistemological resources," for example, explore the sources of knowledge on which students rely to create personal theories used to understand science concepts (Hammer and Elby, 2003). This work shows that the "elevation" of an epistemological resource (e.g. books, websites) significantly affects how it is considered during sensemaking. This work partly builds on foundational research on "phenomenological primitives" (p-prims), that is, pieces of intuitive knowledge that learners bring from their lives to schools (diSessa, 1993). Using p-prims, students consider their often-implicit perceptions of naturally

observable phenomena to make sense of abstract concepts. For example, "the stronger I push something, the faster that thing will move" is a p-prim that helps young learners understand how objects react to force.

Although there are often contradictions between formal physics' description of phenomena and p-prims, science instruction can use the latter to advance academic knowledge, as proposed by "knowledge in pieces" (KiP), the broader framework proposed by diSessa, whose fundamental units are p-prims. One of the practical implications of that KiP framework is that the inferences that constitute p-prims can sometimes be transferred to other topics in the natural sciences. That practice could leverage intuitive knowledge to promote learning of content domains that are conventionally separated but have similar principles. For instance, the same idea motivating a physics p-prim (if an *object* bumps into *another object*, the second *object* will likely move) might illustrate a concept in chemistry (if a *molecule* bumps into another *molecule*, the second *molecule* will likely move).

KiP has also influenced the inception of the *Ideology in Pieces* framework *(IiP)*, its counterpart in the context of social sciences education research (Philip, 2011). Like in KiP, elements of commonsense in IiP play a crucial role in how we make sense of the world. In those frameworks of the "in-Pieces" family, commonsense elements are the basis for p-prims and their parallel in IiP, *naturalized axioms*. Unlike p-prims, naturalized axioms go beyond the individual observation of phenomena and are also formed through social interaction. Some examples of naturalized axioms identified in schooling – the context in which they were originally formulated – include "some kids are just smart" or "inequality will always exist." These statements act like accepted truths that actors in the school ecosystem use and might contradict other beliefs they express in different contexts, i.e. people who hold those views in school settings might reject those same views in other contexts and might not recognize their contextual nature. As a result, perceptions shared by individuals in a community are sometimes taken for granted by its members. Accordingly, individuals interpret phenomena in society through the lenses of both their lived experience *and* concepts founded on beliefs shared by their social groups. In both frameworks, elements of common sense are highly contextualized and are found "often in partial and incomplete ways that obscure other analyses (p. 302)." Also relevant in our context, naturalized axioms are constructs that serve the goal of maintaining structures of power.

The idea of naturalized axioms serves as a bridge between constructivism and our lens to political knowledge construction: the theory states that these pieces of socially accepted truths form the basis for more sophisticated sensemaking. As we saw, that constructivist lens finds parallels with Philips and Milner's (2021) definition of "deep memetic frames": "sensemaking mechanisms that allow people to tell coherent stories about the world" that are grounded in "paradigms through which we experience everyday life (p.19)." Now, if naturalized axioms on politics and society are intentionally biased in their origin or nurturance – for example, through politically motivated directions on how to "do your own research" – we understand that the resulting ideas might contribute to an information landscape prone to disinformation.

2.2 An analysis of political theory building rooted in constructivism

Those explanations for theory building have strong roots in constructivism, one of the perspectives that we apply in this work. We take that direction because we understand that there is underexplored potential in constructivism as a theory to explain the processes at play in a specific epistemological moment: *the bridge between "do your own research" and the consolidation of world views founded in disinformation*.

Constructivist theories describe learning as a "reciprocal and solidary process of invention and discovery," in which the object of inquiry and the learner interact, resulting in knowledge building (Macedo, 1991). That process is considered dialectical in its means and ends: knowledge produced (*ends*) becomes resources (*means)* for further learning. Fosnot and Perry (1996) explain that we learn through developing microtheories to elucidate the unknown. In an iterative, dynamic process of *assimilation* and *accommodation*, those theories are formed with the aid of activators (usually verbal or visual cues associated with the learner's cultural context) and become bases for developing new hypotheses that help us make sense of uncertainty.

Other theories to explain learning have complexified and complemented the constructivist proposition, especially those drawing on sociocultural approaches (e.g. Vygotsky, 1978; Engeström, 1991; Cole and Wertsch, 1996). In our case, these perspectives are crucial to explaining many other parts of the puzzle, such as the development of a particular language to describe societal problems and how learning can be detected by looking at changes in that vocabulary. We plan to tackle these issues in future publications. In this paper, we focus specifically on the use of activators to guide people in building theories about political events, inspired by the KiP (diSessa, 1993) and the IiP frameworks (Philip, 2011).

As in a prototypical progressive classroom, activators can take different forms, such as carefully formulated questions or schemas that are well accepted within the audience (e.g. "Why are people suffering?") and formulated as part of dialogues (e.g. "Does the state of emergency start today in Brasília?"). In some cases, these activators function as entry points to "epistemic pipelines" with predefined (but initially hidden) destinations – almost always, a political stance that includes conspiracy theories or similar ideas (e.g. "There is a conspiracy to overthrow the federal government"). As a side effect, as the data suggest, there is a perception that the knowledge about the conspiracy is being built collectively in small steps.

This work looks at citizens participating in dialogues with a political leader who resorts to such activators. We examine informal conversations held by former Brazilian President Jair Bolsonaro and investigate the activators he uses in his conversations with his followers to answer the following research questions:

RQ1. How does Mr Bolsonaro's discursive moves include activators that lead the audience to reach conclusions and learn "on their own?"

RQ2. To what extent does Mr Bolsonaro's audience follow those clues and mention politically motivated disinformation in their comments?

3. Methods

3.1 Data source and selection criteria

The research team started with an unabridged data set comprising 50 videos, totaling 12 h and 5 min. The length ranged from just below 4 min to above 35 min and the clips were published by Foco do Brasil, an allegedly independent YouTube channel that is, in fact, highly partisan and pro-Bolsonaro – titles of almost all of its videos contain the former president's name; most are recordings of his speeches, official or otherwise; and the president is usually depicted as a "family man," faithful and an extremely witty and skillful politician. Then, we chose the ten most viewed videos at the time of data collection (March 2021). One of the videos was replaced with the 11th most viewed. The reason for removing that one piece was its content: the video contained footage of Bolsonaro mainly speaking

with journalists – a setting that was not interesting for this study, which is interested in conversations between the former president and laypeople. Videos in that subset varied in length (from 3′56″ to 35′29″, totaling 2 h and 11 mins) and depicted informal interactions between the former president and citizens. One of the researchers did a first round of viewing to select videos that allowed initial coding and removal of videos/segments that included content similar to fan–idol interactions, with a prevalence of requests for *selfies* and even autographs.

We chose the YouTube channel data source because of the apparent spontaneity of interactions. Unlike press interviews, information exchange in those chats is not filtered by "gatekeepers" and allows the former president to speak directly with an audience of followers. It is unknown whether those dialogues are staged, but the interlocutors are, with scarce exceptions, supporters of the former president. Those videos, in general, undergo minimal editing before publishing. Most present the entirety of those informal chats held by the former president in a public area close to his official residence. Due to the dialogical nature of those meetings, the videos allow for analysis addressing both research questions.

Previous work by the researchers signaled preliminary evidence of dialogic patterns and of naturalized axioms in videos and instant messaging content published by the former president (Russo *et al.*, 2021; Russo and Blikstein, 2022). Although not conclusive, that evidence helped direct the framing of the present study. Accordingly, the team analyzed the videos for evidence of patterns that can help unveil the connections between political discourse and knowledge-building practices. With that in mind, we defined two axes for analysis, one associated with the content and the other with form. Although we are aware that those two elements depend on one another, this division serves the purpose of contextualizing the data along the dimensions based on our theoretical framework.

We used a lens from the KiP and IiP frameworks for the content component. Consequently, in examining the data, we looked for patterns similar to naturalized axioms, that is, elements of common sense that are highly context-dependent and assist members of a social group in making sense of the social world. The IiP framework was initially proposed to analyze teachers' sensemaking about racial justice. We use it in our analysis because we understand that it satisfactorily contributes to understanding social phenomena by building on elements of KiP.

For the form component, we focus on dialogical knowledge construction. We were interested in finding patterns akin to classroom language, such as "Initiation-Response-Evaluation" (IRE) (Cazden, 1988) and "Initiation-Response-Feedback" (IRF) (Cazden, 2001). Those types of sequences (IRE/F) have been identified as part of a "teacher-talk register," a conventional way of talking that distinguishes teachers as a professional group with its standards on language use. Research across decades has identified that IRE/F prevails in educational settings. In one early study discussing the practice, the pattern makes up over 50% of classroom dialogue (Mehan, 2013). The same author warns against the indiscriminate use of the strategy without consideration of sociocultural differences, based on observations of Native American students in comparison with white ones (Mehan, 1979). Other authors criticize IRE/F sequences' effectiveness to promote legitimate dialogue in classrooms (Neal, 2008). Additionally, a quantitative study found a correlation between the use of IRE sequences and low involvement in upper-elementary mathematics classrooms (Turner *et al.*, 1998). Other scholarly work in non-US high school science classes found that IRE sequences were predominant in teacher-centered settings, as opposed to student-centered ones (Wu and Huang, 2007).

Despite criticism, IRE/F sequences continue to be prevalent in educational settings, including inquiry-based classrooms – for instance, the corpus of a 2007 study had

approximately 70% of interactions following that pattern (Wells and Arauz, 2006). The same pattern has also been identified in teacher education programs (Ekström, 2013) and other types of professional training (Zemel *et al.*, 2011). In our analysis, we consider the shortcomings of that strategy and refer back to those in the discussion session. We understand that classroom dialogues might serve purposes different from simply instructing on "hard facts": teachers' questions can also be invitations for reflections and to elaborate on topics (Dillon, 1983). With that in mind, we seek patterns like "reflective toss," previously identified in a 6th-grade class (Chin, 2007): teacher and student engage in a dialogue, and at the end of each answer lies a "hook" that the instructor uses to create a new question, eliciting "further generative thinking" in the learner. That account classifies "reflective toss" as an instantiation of Socratic dialogue identified by Van Zee and Minstrell in formal science instruction (1997). Another type of Socratic dialogue is the "verbal cloze," in which the instructor stops in the middle of a sentence so that the learner can verbally "fill in the blanks" (Chin, 2007). With that move, an instructor shares the task of reaching conclusions with students. Based on those references, we draw on the perspective that questions in informal learning settings can "stimulate productive thinking," as observed in classrooms (Chin, 2007), while keeping a critical stance toward the belief that all dialogue is conducive to learning.

3.2 Analysis procedures

Despite the two-dimensional, theoretically informed framework outlined above, we did not use a strict initial code because our approach was initially exploratory. One of the researchers conducted initial coding and identified the prevalence of *questioning* as a rhetorical device used by the former president. Different modes of questioning described by literature on classroom discourse were identified: explicit questioning – single rhetorical questions and reflective toss (Van Zee and Minstrell, 1997) – and implicit questioning – verbal cloze (Chin, 2007). Then, a second rater was recruited to quantify the frequency of those rhetorical devices in the data set. We understood that a second rater would confer a more nuanced perspective to a topic that can be highly controversial and subject to personal perspectives. Additionally, the second rater took part in the collective effort of checking the connection between existing theory and our data. After initial training on the coding scheme, both researchers compared coding in a subset of three videos. They reached a consensus on the final coding criteria used by the second researcher in the remaining data set. Each video was then transcribed and divided into units that began at the start of each minute (that is, unit 1 started at 00:00:01 and ended at 00:00:59; at the end of each video, there was a shorter unit that could end, for example, at 00:10:35). Those portions became the units of analysis (see Table 1).

We focused our analysis on the three most representative excerpts of dialogues. In the following section, we reproduce these dialogue excerpts extracted from the videos. In each,

Total number of units of analysis	134 (100%)
Discourse patterns	
Reflective toss	18 (14%)
Rhetorical question	34 (25%)
Verbal cloze	3 (2%)
Total	*55*

Source: authors

Table 1. Number of units of analysis and frequency of each discourse pattern

we highlight elements that represent patterns found in Mr Bolsonaro's interactions with citizens. Then, we briefly explore connections between those instantiations and dialogical knowledge construction strategies.

Videos were analyzed in their original language (Brazilian Portuguese) by native-speaker researchers working in graduate schools in the USA, and only excerpts used in this paper have been translated into English. That means that data in Portuguese were analyzed against examples from the literature that are mostly in English by researchers who have professional fluency in both languages. Researchers identify with a progressive agenda and are openly critical of policies and worldviews represented by former President Bolsonaro.

4. Results and discussion

This section presents the results supported by three examples found in the data. We chose those examples based on the premises of the KiP framework. That framework is used as an analytical lens that helps identify patterns and ways of thinking in day-to-day discourse found in spontaneous conversations. We start each subsection by presenting a dialogue excerpt, followed by an overview of the patterns identified. Then, we draw connections between the content of those excerpts and the components of the theoretical basis of our work-naturalized axioms, dialogic instruction and nonsustained theories for content; dialogical classroom patterns for form. At the end of this section, we discuss results in light of our research questions. For the purposes of publication, the research team translated the dialogues (originally in Brazilian Portuguese) to English.

4.1 Dialogue 1: asking the "right" questions

One key pattern that emerges across different conversations is asking questions that guide the audience to "explain" phenomena following Bolsonaro's point of view. On various occasions within Dialogue 1 (see Figure 2), he asks seemingly mundane questions ("How is life going?"; "What's up?"); someone in the audience answers; he then follows up, trying to incentivize more detailed explanations, which a third speaker offers, and so forth – in a process akin to a "twisted" Socratic dialogue. Note, for example, *how protagonism is given to the president's followers* in the instance that follows (Figure 2).

In Dialogue 1, notice *the use of questions that invite the audience to come up with their explanations* for the current state of affairs ("Why are people suffering?" "Is the situation in this state any different from that state?"). Indeed, followers offer answers that endorse the president's broader narrative, according to which states and municipalities – not the federal government – are responsible for the economic and social crises derived from the COVID-19 pandemic. Their answers place the burden on local administration and remove any guilt from the president ("In my state, lots of stores are closed, people are starving"). Mr Bolsonaro, however, *never has to state his beliefs and theories explicitly*. In essence, he seems to prompt interlocutors to verbalize a naturalized axiom: "There is a choice to be made between the economy and public health" at the peak of the pandemic (when vaccines were not available, and measures like temporary closure of services were seen as a short-term solution to fight the spread of the virus.) Initially, Bolsonaro turns the follower's statement that life was "going well" into a question ("Going well?"), skillfully prompting him to focus on the negative. Quickly, one of the participants starts associating closures with the governor's initiative that hinders people from working. As seen in other utterances in Dialogue 1, this perception is taken for granted – no one offers alternative explanations or different layers of problematization.

This pattern holds similarities to an approach found in classroom practices, *the reflective toss*, introduced in the theoretical framework. This type of interaction differs from

Source: YouTube (http://y2u.be/YXBqbXQSGBs). Figure by authors

Figure 2. Transcription of Dialogue 1

traditional classroom discourse in ways by which the teacher "catches" the meaning exposed by the learner and throws back the responsibility for thinking. Similarly, in Dialogue 1, Mr Bolsonaro seems to help followers "unravel" the economic problems by weaving answers using mediating questions that individualize states and cities (Figure 3), making it appear that their issues are isolated (thus suggesting that local administrations are to be held accountable), rather than connected with significant challenges faced by the country that represents the union he is expected to govern.

Regardless of the blatant inaccuracy of these theories, the president uses a discursive device (strategically posed questions) that creates an atmosphere of collective knowledge construction, possibly making followers feel that they are helping to "solve the puzzle" about the state of the country, leaving behind the status of passive listeners.

4.2 Dialogue 2: keeping the "truth" under control

Even though the strategy of asking questions is consistent across many of his interactions with the audience, the president sometimes gives a subtle but decisive "final word," as seen in Dialogue 2 (Figure 4). On some occasions, Mr Bolsonaro acts like a "teacher" who lets students share their thoughts and create their explanations without giving up the privilege of the final word. In Dialogue 2, the president discusses the position of the tourism industry. Note, again, that he starts by asking questions but, in this case, ends up with a short (but crucial) statement about choosing mayors.

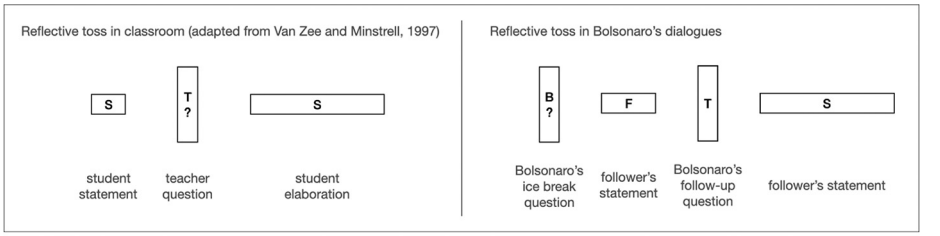

Figure 3. Reflective toss in classrooms and reflective toss in Bolsonaro's dialogues

Source: Figure by authors. Adapted from Van Zee and Minstrell (1997)

DIALOGUE 2

Bolsonaro	Supporter 3	Supporter 4	Supporter 5
Tourism industry went on the ropes, didn't it?			
	Everything stopped, you know, everything stopped, now it's starting to recover.		
Who were the ones who demanded to close everything, to stay home, "economy is secondary," who was it? Wasn't me, was it?			
	No, no, Bolsonaro! For sure not!		
Just to make things clear, job destruction in Brazil was a result of…? [waits for the follower to complete]			
	No, it wasn't you!		
Now, everyone, let's take this opportunity. There'll be municipal elections, ok? [...] Because, the mayor, for instance, if they closed everything, if you think they did it right, reelect them, if you don't think so, change them. Ok? Your mayor, did he close everything?			
		Rio de Janeiro!	
			[The local administration in] Rio de Janeiro, Belo Horizonte [state capitals] ruined our lives...

Figure 4. Transcription of Dialogue 2

Source: YouTube (http://y2u.be/bdfRebIp00c). Figure by authors

The president uses the primary occupation of his followers (the travel industry) as a motivator to ask questions about the impact of the lockdown on the economy. They collectively build a "mini theory" about the economic decline:

- mayors closed down everything;
- closed businesses lead to a bad economy; and
- thus, mayors are to blame for the bad economy (not Bolsonaro himself or the pandemic).

Once that theory is established, he then lectures about the importance of local elections, ending his short speech with another simple question ("Did your mayor close everything?"). The process is complete when followers agree that "the local administration ruined our lives." The question-answer pattern engages the audience and creates an atmosphere of collective knowledge construction –followers are, again, contributing pieces to the puzzle, kept under control by the president, but his role is mostly of establishing an infrastructure – an "epistemic pipeline" – for followers to offer their own answers.

That question-answer pattern also seems to expose another potential *naturalized axiom*: "Individuals are accountable for their own fate." An interesting aspect of this component of common sense is that it is applied selectively: citizens (individuals) are capable of choosing mayors (individuals) that have the power to affect change; Bolsonaro (individual), however, is not to blame. Indeed, p-prims and naturalized axioms are mental models that might not require "global consistency," that is, they apply to selected contexts: in this case, some individuals are expected to be held accountable (citizens and individuals) while others are not (Bolsonaro). In fact, naturalized axioms and p-prims, by definition, imply people's lack of awareness of the inconsistency in interpretations across contexts (Philip, 2011). Therefore, it is expected that, in expressing naturalized axioms, the participants in the dialogue use different parameters to assess individuals' accountability.

Similar to the previous dialogue, in Dialogue 2, *the president uses techniques that resemble those used in constructivist classrooms*, with the difference that the object of the "lecture" is himself and his own decisions, not a topic in biology or physics. Comparably to a teacher using a "verbal cloze" in the classroom, Bolsonaro prompts the follower to "fill in the blanks" by leaving an open question about "job destruction." The follower does not offer a complete answer. Still, he takes the opportunity to recontextualize the economic crisis: if people believe that mayors and governors are the ones to blame (and "for sure not" Bolsonaro). Thus, they will have an opportunity to "make justice" in the upcoming elections ("reelect them or do not reelect them"). Cazden sustains that recontextualizing phenomena is one of the desired outcomes of the "E" part of the IRE sequence (Initiation-Response-Evaluation). By "evaluating," an instructor is not judging the response but rather presenting a different perspective that the learner might use in the future to entertain the problem.

4.3 Dialogue 3: legitimizing followers' theories

Another pattern arises in Dialogue 3 (Figure 5), in which a follower exhorts people to go to the streets to "fight for their right to put food on the table," which, he argues, is not an object of concern by "normal" politicians (a category from which the follower objectively excludes the president). Here, we see how Bolsonaro starts with a seemingly innocuous question (*rhetorical question)* and then picks up on topics and themes offered by a follower to elaborate on proto-theories proposed by the latter: "No one is going to pay your mortgage," "we will all die starving" and "we need to wake up." The president elaborates on each of those topics, offering that "people don't appreciate what comes easy," praising self-sufficiency and sustaining the need for sacrifices and alerting against the danger of an

DIALOGUE 3

Bolsonaro | Supporter 6

[Does the] State of emergency starts today in Brasília?

Yes, I'd like to call up [...] to the whole country to say "enough" to this dictatorship [...]. It's not enough to simply do what they [demonstrators] are doing now [...], we need to come here, to speak to governors and stop this farce, [...] because no one is going to pay, [...] your mortgage, food on your table. These guys want to knock Brazil down. So, the population needs to be made aware, to rally [...] let's fight for our right to put food on our table, and support the only president who is worth it, not only in Brazil, but worldwide today. My warning now is: wake up, folks, you're gonna die starving, from diseases much worse than this one...

We don't appreciate the value in anything that comes easy, even a gift, a bicycle that you give to a child… If he doesn't see the sacrifice needed to get that bicycle, it will be worth nothing […] I said that I'm not Brazil's father […] but the most sacred thing we have is our freedom, and people are not paying attention to this. I even spoke about the parable of the boiling frog, part of the press distorted [my speech] when I said how easy it would be to impose a dictatorship in Brazil […] People slowly, slowly, appropriate your means, appropriate your hopes, your livelihood, you come to be obliged to be supported by the State, you see some governors speaking about "emergency funds" [an originally federal program], they want to start their own emergency funds programs... the more people live under the State's favor, the more dominated these people will be.

Source: YouTube (http://y2u.be/LbqOEdeLKTk). Figure by authors

Figure 5.
Transcription of Dialogue 3

impending "slow" coup by the opposition. While he builds upon mini-theories raised by the follower, he surreptitiously adds new pieces to the explanation that reinforce his agenda.

Besides the president's elaboration, a few other themes emerge from the follower's speech that might fit the classification of naturalized axioms. In his call to arms, the follower refers to Bolsonaro as "the president who is worth it." Again, context-specificity is present, and the follower does not make clear what distinguishes the chief of state from other politicians. Bolsonaro himself had held legislative roles for 20 years before being elected as president; and has been the object of multiple corruption scandals, in addition to being on trial in military courts. Despite all the evidence, the follower singles out Bolsonaro from the whole group of presidents *worldwide*. One contribution from another derivation of KiP, Transfer in Pieces (Wagner, 2006), is that the lack of systematicity of naturalized axioms prevents people from noticing internal contradictions in their systems of beliefs. Perhaps this points to a possible explanation for the follower's view of Bolsonaro, which detaches him from the whole class of politicians, despite his lifetime involvement in politics and the many lawsuits involving him directly.

4.4 Discussion: modeling knowledge construction for wider audiences?

We analyzed in-person conversations held by former Brazilian President Jair Bolsonaro and his followers. More specifically, our first research question asked how the president used "activators" that lead followers to feel that they are reaching conclusions on their own. Even though we cannot describe the whole data set in this paper, we showed three prototypical examples of how Mr Bolsonaro uses "question-posing" as a discursive device to initiate a

process of knowledge building, in which participants develop a sense of agency in formulating explanations. For example, he asks followers "why people are suffering" during the pandemic or "who destroyed jobs" instead of offering direct, rehearsed answers. On many occasions, after a series of questions and answers, he summarizes the conversation to make sure the new collective consensus aligns with his intended goal.

The dialogue excerpts analyzed in this paper demonstrate how Mr Bolsonaro uses approaches that resemble some teaching and learning strategies that use question-posing as a way to elicit generative thinking in the learner. In the cases discussed above, he uses these strategies to guide the dialogues through a path that legitimizes a point of view that exempts him from blame for the economic and social crises derived from the COVID-19 pandemic. *Those discursive devices might create an atmosphere of collective knowledge construction.* Additionally, this question-answer pattern seems to expose potential naturalized axioms, such as the idea that "individuals are accountable for their own fate" or that "there is a choice to be made between public health and the economy." As the literature proposes, those naturalized axioms are highly context-dependent and may be applied selectively. This is salient in the example of the naturalized axiom according to which Bolsonaro is "the president who is worth it."

As for our second research question – to what extent followers accept Bolsonaro's activators and actively propose explanations and theories – we found evidence that, up to a certain extent, the audience indeed engage in *completing the information the president offered*. Our analysis shows that the activators effectively elicit followers *to provide their answers and new pieces of the puzzle*, which, once assembled, are reasonably aligned with the president's position, further elaborated by him. Also, the examples show that using naturalized axioms in both directions (president to citizens and citizens to president) might reinforce the president's agenda: Mr Bolsonaro picks up on topics offered by followers and vice versa. Look from the outside, these organically generated proto-theories resemble "mini" conspiracy theories, per at least one accepted definition for those ("explanations for [partially] observed events in which an unknown, unusually powerful, and competent group of potentially nefarious agents act in secret.", Enders and Smallpage, 2019). In sum, the data suggest that the question-and-answer patterns and the strategic use of naturalized axioms effectively prompt Mr Bolsonaro's followers to productively engage in dialogues in which they construct explanatory theories about current political affairs.

When put together, evidence found in response to the two research questions raises a further question: we did find evidence of Mr Bolsonaro using dialogue-like approaches, and followers respond to those questions. We might ask, however, how *dialogic were those interactions really? Strategies like IRE/F are dialogic on the surface, but when applied in certain contexts, their potential for manipulation becomes more evident. A sequence of questions or verbal cues might deceive learners into thinking that they have agency, when, in fact, "right answers" are expected. That characteristic, we argue, lend more persuasive power to an authoritarian figure who, by definition, would not likely find in his audience epistemological support for his agenda. For followers, the conversational setup might also feel empowering, despite its scripted nature.*

5. Implications

In this paper, we saw examples that we hope contribute to the discussion about the roots of disinformation, its spread and its effects on society. We used the lens of theory building, which has been exhaustively used in the Learning Sciences, especially in the instruction of natural sciences. We found that Brazilian former President Jair Bolsonaro uses strategies that resemble advanced or otherwise widespread teaching and learning practices, such as rhetorical questions, reflective toss (Van Zee and Minstrell, 1997) and verbal cloze (Chin, 2007). With that approach, Bolsonaro (with the help of his communication strategists) seems

to incorporate at an individual level a strategy that has been used by alt-right groups in the USA: incentivizing and exploring "agentic" knowledge construction and learning to advance controversial and sometimes unlawful agendas. This practice has been documented in recent work at the intersection of information science and politics (Marwick and Partin, 2022; Tripodi, 2018; Zuckerman, 2019; Boyd, 2018).

It is intriguing to notice how the interactions analyzed here relate to literature on information ecosystems (Philips and Milner, 2021). While it is known that Mr Bolsonaro and his strategists explore the pyramidal nature of those systems (Nemer, 2022), those chats seem to ignore influencers: the president (seemingly an apex predator) discuss politics with laypeople, possibly members of the "Bolso-army" described by Nemer. At the same time, given the frequency of those conversations, we may assume that they were crucial in reinforcing support for his agenda and policies – otherwise, he would likely not have devoted hours of his agenda to that every week.

A possible explanation is that Bolsonaro was aware of his role as an influencer – similar to what has been found about Trump (Pérez-Curiel and Limón-Naharro, 2019) – and that the videos will be watched millions of times online. Thus, he is aware that the one-to-one interactions are actually watched by millions, and directly feeds his constituency content by effectively producing "instructional videos" with followers' participation to legitimize his theories. Conversations that, on the surface, might look like spontaneous encounters with followers, are in fact purposefully designed as pieces of communication (and "instruction") that provide ammunition to the human infrastructure of disinformation that has been documented by Nemer (2022). As such, the moment in which Bolsonaro apparently guides one person to geopolitical enlightenment through dialogue becomes an instructional piece that guides the political position-taking of millions of others too who will watch the interaction on their phones, later. Those moments are like disinformation role play – situations of disinformation spread that might look unplanned but become powerful components in his well-oiled disinformation operation. In sum, Mr Bolsonaro might be using strategies that, on the surface, are directed to eliciting reasoning with his direct interlocutors but are actually intended for a much wider audience.

Why might Bolsonaro use such strategies rather than a more conventional style of prepared speeches or merely telling followers his explanation for the country's issues? One possible answer is that he also models a *sensemaking process* for the broad audiences watching the videos online. The goal, then, is not only to establish a conversation with a few face-to-face followers but to make large audiences ask themselves the same questions and engage in the same theory-building process. Similar to Donald Trump, Bolsonaro's lack of command of policy issues is well known. This somewhat generic "Socratic" process applies to a wide range of topics as they mostly default to classic archetypes of "us versus them," "there is a hidden coup underway," "powerful people want me out of power" or other traditional conspiracy theories. This process of question-posing and collective formulating of theories, thus, could be enacted by his followers in various environments, spreading the same kinds of conclusions generated in his face-to-face conversations with followers.

Interestingly and tragically, some of those strategies hold similarities with practices backed by advocates of student-centered teaching, which, some might argue, would improve critical thinking skills. In this context, however, those same strategies might be used in favor of nonsustained claims. Conversation between the Learning Sciences and Information Sciences can lead to a better understanding of this process. There can be conceptual overlaps in theories and approaches that inform both areas. For example, it is intriguing that some aspects of naturalized axioms hold similarities with those that allegedly lead to belief in disputable claims, such as tribal biases (Clark *et al.*, 2019) and collective narcissism

(Cichocka *et al.*, 2016), both associated with the tendency to believe in socially shared "truths." Another aspect is the lack of systematicity of naturalized axioms, which parallels one more characteristic of conspiracism discussed in the literature: evidence has shown that conspiracy theories can be part of a belief system in which logically contradictory views sometimes coexist. As Wood *et al.* (2012) state, one could believe that Osama bin Laden was already dead when he was killed in Pakistan and was still alive in 2012.

5.1 Implications for teaching

As seen, for long, importance has been placed on critical thinking in school curricula, *but lately extremist groups have twisted the meaning of that phrase to suit their interests.* Suddenly, "do your own research" became a motto for denialism and lack of trust in institutions (see, for example, Amarasingam and Argentino, 2020; Marwick and Partin, 2022). That twist in meaning illustrates how certain notions of critical thinking are not sufficient to explain the contemporary world. For example, one might argue that the key is in deriving conclusions only after assessing evidence, but as research has shown, assessing evidence is one of the practices deployed by QAnon (Marwick and Partin, 2022). Research even points to the need to complement that with "critical ignoring" (Kozyreva *et al.*, 2022), that is, to wisely choose what information to pay attention to, to maximize our attentional capacity. Such a tendency indicates a necessity for rethinking the message that we want to convey to school children: *taking an objective and purely logical critical stance is not enough anymore, because even that can be politically instrumentalized.* If teaching how to be "critical" is not enough anymore, what can educators do?

One possible approach in response to this need is to create new pedagogical situations that simulate real-world interactions, where children first actively identify roles and interests in the information ecosystems (Philips and Milner, 2021). Then, children can dissect pieces of disinformation to identify arguments and rhetorical mechanisms that make that piece misleading or false. An activity like that could explore children's existing assumptions (similar to p-prims) about society, and how those assumptions can get appropriated by malicious players in the ecosystem. Such a sequence potentially addresses both the individual and systems level of disinformation, expounding the ecosystem's power dynamics and enabling learners to attend to ways in which those interactions play out in media. Future research should seek ways to test lesson plans following that sequence.

Examples start to emerge that offer alternatives along those lines. For instance, Paris *et al.* (2022) propose a syllabus for post-secondary education that adhere to principles of ecological literacy. Drawing on scholarship on "social shaping of technology" (Wajcman, 2015) and socio-technical systems research, the lessons scaffold the ability to identify instances where rhetorical moves are used as instruments for mis- and disinformation. Another important implication to classroom instruction is that discussions about disinformation should pay attention to possible nuances associated with the limits of scientific epistemologies. This can result in controversy, but educators – and the community of researchers invested in supporting them – should seek to strike a balance between the importance of evidence and the acceptance of established knowledge, which includes science and technical authorities. For example, during a global pandemic, it is not necessary that citizens storm hospitals to "do their own research" on the "actual" number of patients with COVID-19, nor the "actual" death toll. That was precisely what former President Bolsonaro suggested in June 2020 (Jucá *et al.*, 2020). This is not to exempt the media or academia from their decrease in credibility, let alone an aspiring dictator who taps into that phenomenon to spread a harmful agenda. However, this seems to indicate that a balance is needed between blind belief and extreme skepticism. In that conversation, we believe that schools need to stress the importance of

domain knowledge in criticality. In other words, a generic criticality framework, in which students are led to "doubt everything" might lead some of them to a recursive process in which they lose their foothold on basic epistemological processes and could fall prey to extremist groups. However, the combination of criticality and domain knowledge might be a powerful safeguard, but students frame their criticism on the epistemology of the discipline in question rather than on a catch-all framing. For example, when questioning the effectiveness of vaccines, instead of simply being led to believe that "every dataset could be manipulated by the media," students could be led to look at basic tenets of epidemiology, vaccination data and the myriad computer modeling system to simulate viral spread – and ground their criticality on the practices of science. This is a challenge for schools and society as a whole.

6. Conclusion

This paper builds on an extant analysis of the Brazilian state of things in relation to the creation of human infrastructures of disinformation (Nemer, 2022) and the perspective of ecosystems of disinformation (Philips and Milner, 2021) to theorize about how the former President Jair Bolsonaro explores specific rhetorical strategies in dialogical communication with supporters. We discuss how Bolsonaro uses explicit questioning (rhetorical questions and reflective toss) and implicit questioning (verbal cloze) to build on followers' assumptions while furtively including new pieces of a puzzle that helps his constituency explain the world based on a political agenda with ends that are debatable to say the least.

One of the limitations of this study resides in the number of videos analyzed and the total length of the footage used to build our case. Although we understand that those are constraints to the generalizability of our argument, we also believe that the apparent paucity of data is counterbalanced by two factors. First, the present work is situated in the context of a broader project for which we are constantly analyzing multimedia content published online by the former president and his supporters. In previously presented work, we found, for example, preliminary evidence of the use of naturalized axioms and questioning as a rhetorical strategy (Russo *et al.*, 2021; Russo and Blikstein, 2022). Now, we further elaborate on those findings to inquire how those strategies have been used. Second, the purpose of this work was to leverage evidence to theorize that those rhetorical techniques resemble teaching and learning strategies. Although small in its original scale, those dialogues reach substantial audiences online – as we write, the videos that contain the excerpts in this article collectively total more than 2.5 million views on YouTube. In other words, despite the apparent paucity of data, the words in those videos potentially have an enormous effect in shaping political position-taking in Brazil.

Some possible future directions for this work include inquiry into other politicians' communication practices, examination of larger data sets on social media and using learning analytics techniques to automate data analysis. We hope this work can shed light on how such an approach to politically motivated disinformation can help us better understand this phenomenon and, hopefully, design strategies to counter its deleterious effects on political position-taking.

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