Understanding How Influence Operations Across Platforms Are Used To Attack Journalists And Hamper Democracies

WRITTEN REPORT AND RESEARCH

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J ournalism is a fundamental tool for the defense of democracy, as it sheds light on issues of public relevance and serves as a watchdog to the powerful. The importance of journalism increases in critical economic, political, health, and social situations, when reliable and fast information is even more essential for public and individual decision-making. In Brazil, however, journalists are being regularly attacked on social media and beyond, which has made it difficult for some to exercise the profession, as they struggle with fear and self-censorship. These attacks are different when we analyze minority groups, such as women, black people, indigenous people, Asians, and LGBTQIA+. To understand how these online attacks on journalists happen, we used a mixed-methods approach that included semi-structured in-depth interviews with 13 Brazilian journalists who have suffered online violence, and analysis of data collected from Twitter, YouTube, and WhatsApp. The data were studied by combining qualitative, network, and lexical analysis. We used qualitative methods to double-check and interpret the attacks in our sample, as well as network analysis methods to compose networks of Twitter hashtags and YouTube recommendations in order to understand the connections among topics and actors involved. Finally, lexical analysis was employed to understand different words and expressions used to attack journalists according to their gender and race. The main goal of the research is to demonstrate concretely how these attacks have impacted the lives of journalists through different platforms and how violent discourses gain space on social networks in the Brazilian context.

Organizations

InternetLab

InternetLab is a research center in law and technology. It develops research on human rights and technology, oriented towards public policies, and publishes books, reports, articles, and guides. It has been working on gender violence on the Internet since its foundation, as well as addressing issues related to women and online privacy and feminist activism. Learn more: **internetlab.org.br**

INCT.DD

The National Institute of Science and Technology in Digital Democracy (INCT.DD) is composed of a network of more than 50 high-level Brazilian and foreign research centers in the area of digital democracy. It is based at the Federal University of Bahia (UFBA) and its Data Science Laboratory for Digital Communications (C2D2) develops methodologies for analyzing online platforms, social networks, instant messaging, and government applications.

DFRLab

The Atlantic Council's Digital Forensic Research Lab (DFRLab) is a leading center at the intersection between government, media, and technology. It aims to identify, expose and explain disinformation when and where it occurs, promote objective fact as a foundation in free and open societies, and protect democratic institutions and norms from those who would undermine them.

VERO Institute

VERO Institute is an initiative from digital communicators committed to protecting democracy, fostering online speech, and building solutions to combat misinformation. The project was built by internet natives and is focused on establishing a healthy internet environment for individual and collective development. With a vocation for the digital public sphere, VERO promotes online communication through research and education initiatives.

AzMina

AzMina is a non-profit institute that seeks to combat the different types of violence that affect Brazilian women. It produces a digital magazine, maintains an App for tackling domestic violence, and uses a tool to monitor women's rights in the National Congress, in addition to conducting campaigns to combat violence against women in Brazil.
Learn more: **azmina.com.br/instituto-azmina/**

VOLT DATA LAB

Volt is a data-driven journalism agency, providing data-driven investigations, research, news stories, visualizations, interactives, on-demand projects, and training to media companies and NGOs. It also publishes its own stories in partnership with major and small-sized news organizations. Learn more: **www.voltdata.info/en**

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1_ Introduction

1.1_ Context

The year 2020 was considered the most dangerous to be a professional journalist in Brazil's recent history[1]: the National Federation of Journalists[2] registered 428 cases of violence, while the NGO Reporters Without Borders[3] recorded 580 attacks against members of the press in the country. The NGO Article 19 has registered the steep decline in freedom of expression in the country in its 2019/2020 report, with Brazil transitioning from an environment considered "open" to a "restricted" one. Attacks on journalists - especially attacks on women journalists - have been a key factor in this decline[4]. President Jair Bolsonaro, his family and allies, including state ministers and congresspeople, have been singled out as the main sources of these attacks[5].

While some of these attacks included physical aggression, the majority of them took place online, following a global trend that has seen a surge in online violence against journalists, especially when there is a democratic backsliding. Attacks on the press are, in a sense, an attack on democracy itself, as journalism is an essential part of democracy, not only because it arms citizens with information about the world around them, but also due to its role as a watchdog that holds governments accountable.

Globally, women are the main targets of these attacks, which often are manifested in the form of online gender violence and harassment[6], as shown by a series of studies in different countries, including Brazil. Recently, research conducted by Reporters Without Borders and the Brazilian organization Institute for Technology & Society (ITS Rio)[7] showed that women journalists were 13 times more mentioned than their male colleagues in tweets that used hashtags against the press.

In addition to their targeting of women and other historically marginalized social groups, influence operations (IO) targeting journalists - as other IOs - are also characterized by their cross-platform nature[8]. Actors behind these campaigns leverage different platform features for different purposes, which range from reaching a broader audience to keeping campaigns alive for a larger period of time. Perpetrators take advantage of each platform's features to coordinate attacks and spread disinformation. These architectural variations, such as end-to-end encryption, message formats, audiences, and algorithms, offer perpetrators a menu of tactics to organize their influence operations.

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[1] https://latamjournalismreview.org/articles/attacks-journalists-brazil-2020-bolsonaro/

[2] https://fenaj.org.br/violencia-contra-jornalistas-cresce-10577-em-2020-com-jair-bolsonaro-liderando-ataques/

[3] https://rsf.org/en/reports/rsf-tallied-580-attacks-against-media-brazil-2020

[4] https://www.article19.org/resources/global-expression-report-2021-gxr21-resources-for-the-media/

[5] https://latamjournalismreview.org/articles/attacks-journalists-brazil-2020-bolsonaro/

[6] https://www.icfj.org/news/online-violence-new-front-line-women-journalists

[7] https://rsf.org/sites/default/files/relatorio_ataquesaojornalismo_rsf_3.pdf

[8] https://disinformationindex.org/2019/11/the-new-trends-of-influence-operations/

Although the attacks against journalists take place in the context of weakening democracies, which implies online and offline offenses, understanding how the aggressors make use of different platforms and how the victims have their lives concretely affected are two important questions that will guide our writings over the next few pages.

1.2_ Research Questions

While the scholarship on violence against journalists has been growing, there is significantly less research that analyzes this issue from the perspective of influence operations. This report looked at attacks against journalists in Brazil from a cross-platform perspective, with a special focus on the articulation between gender and race. It aimed at answering the following research questions:

1 Are there differences in the way gender violence is fostered and instrumentalized in these influence operations across platforms?

2 Are there differences between online violence targeting women and men journalists? Likewise, are there differences in online violence directed at black, indigenous, and white journalists?

3 To what extent are influence operations targeting journalists cross-platform?

4 How do influence operations targeting journalists spread across Twitter, YouTube, and WhatsApp?

5 How do malicious actors appropriate specific platform features to increase the reach of their campaigns?
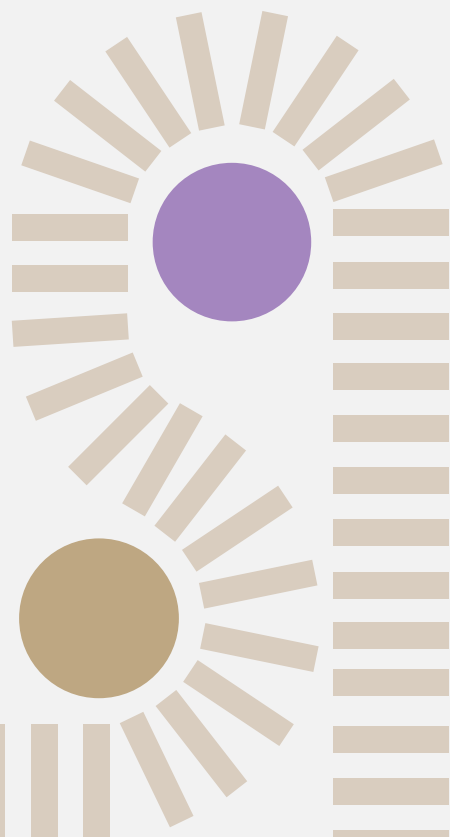
1.3_ Methodology

To answer these questions, we used a mixed-methods approach that integrated quantitative and qualitative data. First, we created a list of 200 Brazilian journalists to monitor during our research. Among them, there were 133 women and 67 men with different social profiles, working in different areas. This list was used as a first step to select interviewees, as well as to monitor profiles on Twitter, comments on YouTube, and messages on WhatsApp groups. Their names were, therefore, the common thread of the research, which uses different methodologies to understand the way in which the attacks happened.

We then selected 13 journalists to conduct in-depth semi-structured interviews. Although the 13 journalists selected for interviews had experienced online violence, which was the reason for our choice, this was not the case for all of the 200 journalists we monitored. Monitoring journalists without knowing if they would actually be attacked during our observation brought the possibility of being surprised by the data we found.

The data collected from Twitter, YouTube, and WhatsApp were analyzed combining qualitative analysis (which involved researchers checking and interpreting the attacks in our sample), network analysis (composing networks of Twitter hashtags and YouTube recommendations to understand the groups of actors involved), and lexical analysis (used for understanding different words and expressions chosen to attack journalists according to their gender and race).

Our data collection focused on Twitter and YouTube, two of the most important platforms in Brazil's current political scenario, especially for journalism. We also used samples extracted from WhatsApp groups to have complementary insights on the way attacks usually circulates on the messaging platform, which is widely used/present in Brazil.

Twitter in Brazil

To establish the context, it is important to know that Twitter is constantly used both by journalists and media outlets to publish news on current events, and by president Jair Bolsonaro and his supporters, who use the platform to attack journalists. This makes Twitter a kind of thermometer for political events in Brazil. YouTube is also an extremely important platform in Brazil's information environment: the country has appeared for years among the ones that use YouTube the most, generally only behind the United States. The platform's national audience exceeds 100 million users, and the time spent on it increased considerably during the pandemic, making TV Globo, the country's main broadcaster, the only channel able to compete with YouTube's video share in the country (other broadcasters do not reach half the share of videos watched on the platform).

In addition to looking at the potential risks posed by attacks that travel across different platforms, it is important to point out that most research that looks at attacks on journalists focuses on gender issues, particularly by drawing a comparison between men and women. Thus, there is a gap related to the need of researching online violence targeting other minority groups in articulation with gender inequalities.

Inspired by research about other social groups targeted by online attacks[9], as is the case of women candidates and lawmakers, this report seeks to work with an intersectional perspective. We start from the understanding that gender, as a category of analysis, needs to be articulated with other social markers of difference, such as the case of ethnic-racial belonging. By adopting this perspective, we draw comparisons between men and women journalists, but not exclusively, as we also observed differences operationalized from the intersection between the categories of gender and race.

METHODOLOGY STAGE	RESPONSIBLE
Choice of monitored journalists	InternetLab + INCT.DD + DFRLab + Instituto Vero + AzMina
Choice of interviewed journalists	InternetLab + INCT.DD + DFRLab + Instituto Vero
Data capture on Twitter, YouTube, and WhatsApp platforms	Volt Data Lab + INCT.DD + coLAB/Fluminense Federal University
Data filtering on Twitter	InternetLab + AzMina
Creation of the visualization platform	Volt Data Lab
Data analysis on Twitter	InternetLab + AzMina + INCT.DD
Data analysis on YouTube	INCT.DD
Data analysis on WhatsApp	coLAB/Fluminense Federal University
Interviews	InternetLab + INCT.DD + DFRLab + Instituto Vero
Interview analysis	InternetLab + INCT.DD + DFRLab + Instituto Vero
Publication of journalistic content	AzMina + InternetLab + Núcleo Jornalismo

[9] https://www.internetlab.org.br/en/inequalities-and-identities/online-violence-hinders-womens-political-representation/

1.4_ Key Findings

The combination of different methodologies led us to the following findings:

— The interviews revealed a **widespread perception that women and non-white journalists are more frequently targeted than their male and white counterparts**. Some women stated they had been targeted with gender-specific content, such as sexualized and misogynistic content. Black journalists said they are often compared to criminals and offended because of their looks.

— There were different perceptions regarding the understanding that Bolsonaro's government had intensified online attacks against journalists. In some cases, journalists believe that the attacks are more directly related to the professional moment they are in, i.e., receiving more public recognition can lead to more attacks. In other cases, journalists point out that they are attacked not only by conservative users, but also by the progressive wing. However, it was generally agreed that the fact that **President Bolsonaro and other members of the government attack journalists creates greater tension and makes journalists more vulnerable**.

— During the interviews, **Twitter appeared as the most problematic platform**, which was associated to the platform's architecture. For instance , one of the black female journalists mentioned that getting the blue verification badge increased the attacks suffered by her. Instagram was also cited by journalists as a problematic platform, but when journalists used Instagram only for personal life, attacks were not mentioned. Moreover, threats often happen in open environments such as Twitter, rather than on private spaces such as direct messages, emails, and messaging platforms.

— Our data analysis found **different vocabularies employed to attack journalists**. There were varying discourses used to direct attacks against Brazilian journalists, which ranged from **misogynous speech to hate speech towards political ideologies**. The differences in these strains are particularly related to the gender of the journalist attacked. We also observed the use of **specific terminology to attack black journalists**. In qualitative analysis, we found that the content targeting black female journalists was more aggressive than that used to attack black male journalists.

— On Twitter, **4 out of 5 journalists who are the most associated with attacks are women journalists, including the most attacked one**. With regard to women journalists, we manually analyzed 4,997 tweets, of which 84.07% (4,201) had no offensive content and 15.93% (796) were offensive. With regard to male journalists, we manually analyzed 4,187 tweets, of which 91.40% (3,827) were non-offensive and 8.60% (360) were offensive. So, women received more than double the offenses of male coworkers on Twitter.

— Qualitative analysis made from the data collected on Twitter reinforced the understanding that attacks on journalists come from users who are on different political spectrums. The case of attacks on journalists who are political commentators demonstrated that waves of attacks can come from different political places depending on which politician is on the news.

— On Twitter, we observed that **attacks aimed at women take into account their bodies and intellectuality and tend to deny that women are capable of exercising their professions**. Similarly, on WhatsApp we see that personal lives are less frequently the topic of attacks in the case of male journalists. When offending a male journalist from Globo, for example, it is common to offend both journalist and the media outlet he works for. However, a woman journalist from the same media is usually offended based on personal aspects, not directly associated with the channel.

— **On YouTube, among 22 videos excluded or turned private during the span of the project, most of them (13) mentioned Patricia Campos Mello**, a renowned journalist targeted by smear campaigns.

— **On WhatsApp, 2 out of 3 most attacked journalists were women, including the most attacked one**. Messages attacking the press increase whenever there is an embarrassing episode involving the government, which makes these attacks convenient to discredit news outlets as a whole.

— Beyond links connecting Twitter and YouTube, the main convergence between the attacks seems to be the textual patterns in hostile comments found on both platforms.

— **Hashtags related to attacks against media outlets are used by the same actors supporting Jair Bolsonaro** and criticizing the Parliamentary Committee on the Pandemic that investigates governmental omissions.

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Interviews
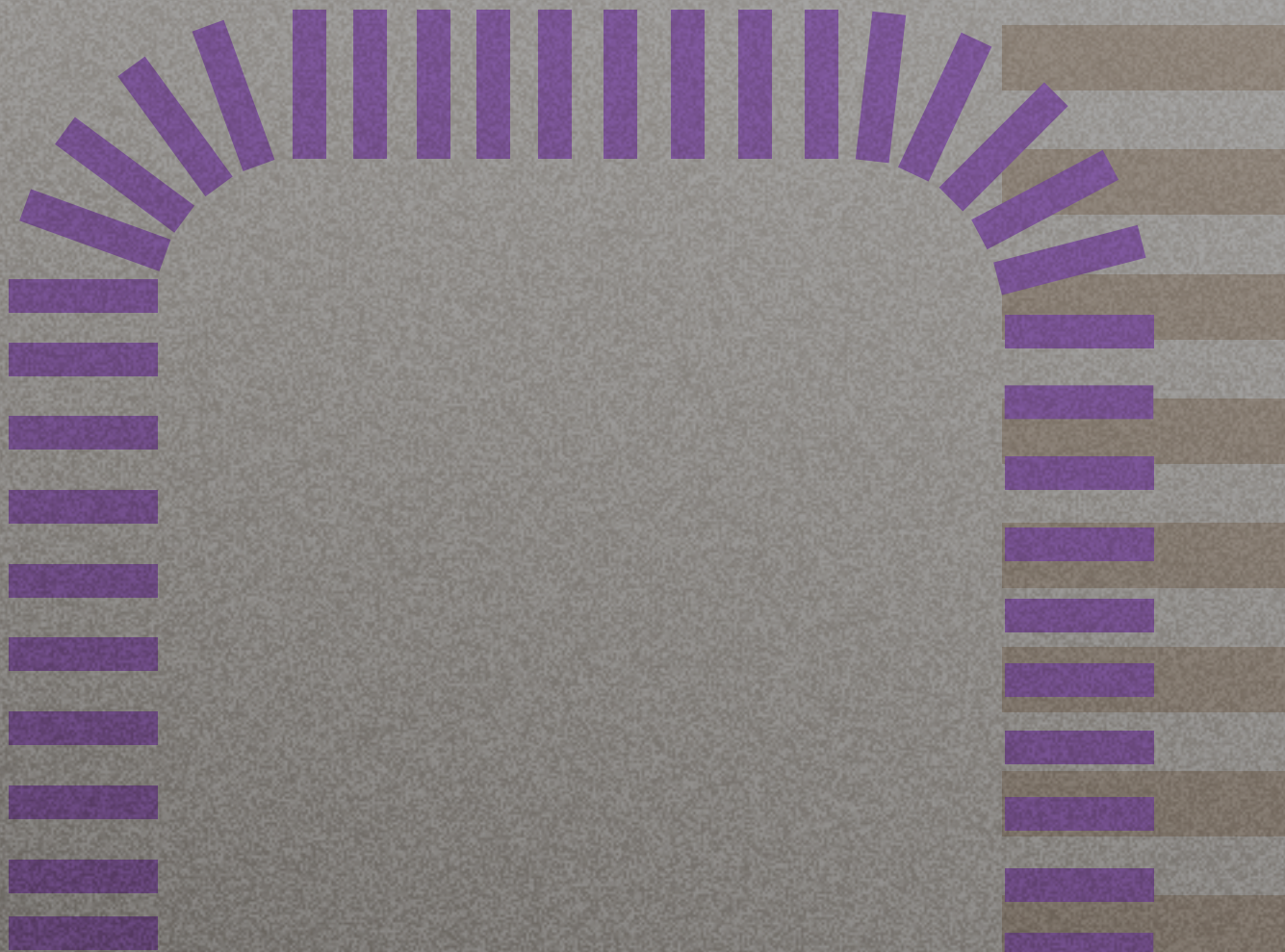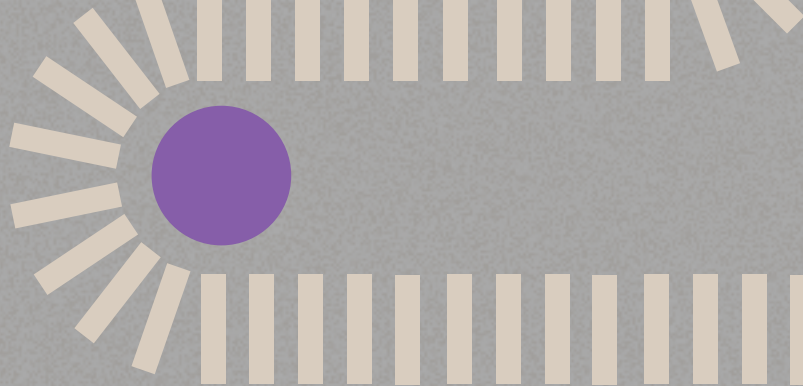
2.1_ Overview: An in-depth look at influence operation targeting journalists in Brazil

We conducted 13 in-depth, semi-structured interviews with journalists that had been targeted by online attacks to understand the structure and impact of influence operations against journalists. The interviews revealed that these campaigns are perceived as an organized or semi-organized effort originating mostly from political authorities such as President Jair Bolsonaro himself, his family, and his allies. Online harassment campaigns were the most common strategy used against journalists, whilst in some cases they were also victims of disinformation. Some journalists had also been threatened or doxxed.

Interestingly, these threats, often happened on open environments such as Twitter, rather than on private spaces such as direct messages, emails, and messaging platforms. Twitter was perceived as the most toxic space for journalists, followed by Instagram. This might be related to the fact that journalists use Twitter, and sometimes Instagram, for professional purposes, while their Facebook accounts are usually closed and used for private interactions. However, it is also possible to think about the desire of the aggressors to silence and seek to remove people belonging to historically marginalized groups from platforms perceived as "public spaces" like Twitter. As it has been pointed out about gender-based violence online, silencing the victim is one of the goals of those who attack them.

The journalists perceived that the harassment was usually misogynist and racist, meaning that women and non-white journalists were among the most vulnerable ones. The interviews revealed that these campaigns had a grim impact on their work, as many of them indicated that they thought about the attacks prior to writing articles, and expressed fears about their physical security - and that of their families. In some cases, journalists said they did not post any information or pictures of their family members on Instagram, fearing the attacks would also target them.

That impact also appears to be a consequence of the lack of preparation of journalists, news outlets, and journalist associations to deal with these kinds of attacks. The interviewed journalists rarely have any kind of specific training or orientation to deal with these situations. That results in taking individual protection measures, if any, which hardly ever suffice to protect them.

2.2_ How journalists are targeted

The interviewed journalists believed that influence campaigns against them were somewhat coordinated and organized, with President Jair Bolsonaro and his allies being most commonly mentioned as the actors feeding these campaigns.

"There were some frictions in our relationship with previous governments, but there has never been something as institutionalized as with the Bolsonaro government, with digital militias, and all. There were some ugly cases, during the impeachment crisis. [Journalist] Miriam Leitão was verbally abused, but it was not similar to the current government's pattern. [Now we see] regularity, authorities backing [the harassment], the upper echelons of the government supporting it", said Daniel Bramatti, head of the fact-checking desk at O Estado de São Paulo newspaper and former president of the Brazilian Association of Investigative Journalists (Abraji).

The starting point of these systematic attacks against journalists is identified in a timeline that goes from 2016 to 2018. In that timeframe, journalists point the impeachment process of president Dilma Rousseff (2016), the murder of City Council Member Marielle Franco (2018), and the election of Jair Bolsonaro (2018) as milestones of an increase on the attempts to discredit journalists and the press in a systematic manner.

There is, however, an outlier case among our sample; a journalist who considers that attacks against her in fact decreased in recent times, especially in Bolsonaro's government. That is the case of the journalist Cynara Menezes, responsible for the blog Socialista Morena. According to her, the fact of her not being from the mainstream media and being strongly associated with the left results in a lack of interest in attacking her. *"They [Bolsonaro's supporters] have developed a strategy of not responding to our criticism in order not to promote us."*

Many journalists point out incidents prior to this period, but there seems to be an overall consensus that the year 2018 was a turning point in terms of scale, regularity, and coordination of attacks against journalists. Miriam Leitão, who works for O Globo newspaper and Globo News channel, and is one of the country's top journalists specialized in covering economic issues, claimed she was frequently targeted during Dilma Rousseff's government by her strong criticism to the government's economic policies. Yet, she sees clear differences between the attacks she suffered then and those that affect her now.

According to Leitão, during Rousseff's government the attacks were occasional and isolated. That changed significantly in the Bolsonaro era, in which she identifies the creation of digital militias, far more organized, structured and with the participation of the president himself. *"I don't think they [the attacks] are the same. Clearly, Bolsonaro's government is a militia. They came from the militia and took it to the Internet. A structure that is not yet properly known"*, she states.

Similarly, Cristina Tardáguila, founder of the fact-checking agency Agência Lupa, says she suffered frightening issues with the previous governments, being threatened and harassed by members of Congress. High-ranking officials of the then governing left-wing party, PT (Partido dos Trabalhadores, in English "Workers Party") directed strong attacks against fact-checkers. The difference, again, comes from the organized and official nature of current attacks.

Not all journalists seemed to think that campaigns were being orchestrated from a centralized place or being structured by the same group (such as the "Hatred Cabinet", or "Office of Hate"). An alternative interpretation alleged that they are a combination of coordinated actions with normal people engaging in collective harassment, particularly triggered through signaling coming from the country's elites. According to their view, certain interest groups repeatedly tried to soar doubts about the credibility of journalists, or, more openly, directly attacked journalists for their work.

The term "**Hatred Cabinet**" (or "**Office of Hate**") was used for the first time in a report in the newspaper "O Estado de São Paulo" to describe the performance of advisers who command attacks against Bolsonaro's opponents[10]. Afterwards, the term was cited by several deputies in the Fake News CPMI (Joint Parliamentary Inquiry Committee, in English)[11], set up in the National Congress in 2019 to investigate the existence of a network of production and propagation of fake news and virtual harassment on social networks. The term actually gained popularity after several court rulings, mainly by the Federal Supreme Court and Superior Electoral Court, against alleged cabinet members[12].

Patrícia Campos Mello, an award-winning journalist who has been the victim of a smear campaign after reporting on Bolsonaro's social media strategies, believed there was some kind of coordination and inorganic activity in these attacks, but said that they were mostly a decentralized effort. She said that the amplification was higher when government officials engaged in such campaigns. *"When an influencer disseminates a piece of information, there is impact. But when it is a member of the government who does so, the impact is much greater."*

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[10] https://politica.estadao.com.br/noticias/geral,gabinete-do-odio-esta-por-tras-da-divisao-da-familia-bolsonaro,70003017456

[11] https://politica.estadao.com.br/noticias/geral,cpi-mira-no-gabinete-do-odio-em-investigacao-sobre-disseminacao-de-fake-news,70003115957

[12] https://politica.estadao.com.br/noticias/geral,sob-cerco-gabinete-do-odio-age-para-manter-influencia,70003850994

Corroborating this thesis, journalist Cecilia Oliveira stated that she saw a steep decline in the attacks she suffered in the last two years. Oliveira attributes it to the fact that the President, his family members, and his ideological supporters, all blocked her on social media.

Other journalists saw the attacks received as part of an ongoing effort resulting from an influence operation seeded years ago. This was particularly the case of fact-checkers. Tai Nalon, the founder of the fact-checking outlet Aos Fatos, and Juliana Piva, an investigative journalist who used to work for the fact-checking agency Lupa, mentioned a "dossier" that was published by the right-wing group MBL in 2018. This dossier gathered information about funders of fact-checking outlets, which included international foundations such as Open Society and Ford, to claim that fact-checkers were members of a "globalist effort". This narrative, they say, still feeds attacks against them in the present.

"There was a specific mindset created years ago, and we still see influencers talking about who fund our work, saying we are part of a globalist conspiracy. So, I don't see this as a specific episode. Wwe can't say 'this came from here or there'. It was a process," said Nalon. According to her, episodes that resulted in massive harassment against Aos Fatos agency started with high-level actors, such as Bolsonaro himself and some prosecutors, but also niche influencers, and were then picked-up by **"soldiers on the ground"**. "These actors feed one another."

Curiously, the attacks didn't seem to depend on pieces of disinformation, even though that did occur. There were no reports of deep fake videos being used, though there were manipulated images. Cecilia Oliveira mentioned she didn't recall any hoaxes being used against her, though she did see memes and cartoons. **It appears that the attacks are not dependent on information being true, false or plausible. Instead, they seem to be more related to the content of their attack and the personality being targeted**.

Movimento Brasil Livre (**MBL**, **Free Brazil Movement**, in English) is a right-wing movement created in 2014 with liberal, anti-corruption and anti-left agendas that participates in several political debates in Brazil since then. In 2018, after Facebook announced partnerships with fact-checking agencies "Lupa" and "Aos Fatos" to control the spread of fake news on the platform, MBL accused them of censorship. They also published, along with other right-wing movements, a "dossier" outlining the profile of journalists linked to the fact-checking agencies that established the partnership with Facebook[13].

Related to this movement of monitoring journalists, in 2020 it was discovered that Bolsonaro's government had hired a company to build a list of journalists and digital influencers. On this list were found personal data of the individuals listed such as phone numbers and email addresses, as well as a classification of them as "detractors", "informative neutrals", or "promising" for the government[14].

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[13] https://br.sputniknews.com/20180524/mbl-facebook-noticias-falsas-regulacao-11293911.html
[14] https://noticias.uol.com.br/colunas/rubens-valente/2020/12/01/lista-monitoramento-redes-sociais-governo-bolsonaro.htm

2.3_ Multi-platform campaign

Twitter was described by journalists as the place where they suffered harassment more often, and Instagram and Facebook were also mentioned. WhatsApp was mentioned by some journalists, but it did not appear to be a serious concern as a direct source of attacks, although it might be used to circulate disinformation associated with them. YouTube was not often mentioned as a prominent platform for harassment, though some journalists noticed that smear campaigns also happened on the platform. Abusive behavior often happens in public spaces, rather than private ones, such as emails or direct messages.

Journalists noticed that they were more harassed on Twitter, with some noticing that Twitter's blue verification badge resulted in more abuse. *"The most immediate consequence of my [account] having been verified by Twitter was that attacks increased,"* said Victória Régia, a journalist writing for the feminist data-driven website "Gênero e Número." The journalist also noticed that actors who harass her exploit the platform design to try to harm her credibility, by using hashtags and tagging the account of the outlet she represents, in what she perceived as an attempt to undermine her credibility with her editors.

Journalists also stated that, while they are personally more attacked on Twitter, other platforms, such as Instagram and Facebook, appear to concentrate abuse against outlets. *"On Instagram, I have never received attacks. On Facebook, I feel that attacks happened mostly on Gênero e Número's page, because people share their posts to conservative groups, and they coordinate attacks"*, stated Régia.

Some journalists said content traveled across different platforms. Pedro Borges, the co-founder of the news website Alma Preta, said Twitter was the most frequent locus of abuse. Still he noticed that screenshots of his tweets were being shared on racist groups on Facebook on different occasions.

Interviewees also frequently mentioned that they thought a large part of the attacks was coming from automated profiles, or bots, on Twitter. In one case, Cristina Tardáguila, the founder of fact-checking website Agência Lupa, identified a bot that tweeted a message every five minutes saying she was not reliable, and tagged a celebrity in order to gain more engagement. Tardáguila, nonetheless, could not identify who was behind the campaign.

Many journalists complained that they could not reach the platforms, especially Twitter, to try to stop harassment against them. Flávia Oliveira, a journalist at Globo News, for instance, stated that the process of appealing to platforms in case of attacks was *"lousy, slow and almost never has a concrete response"*. Her experience is corroborated by Tiago Rogero, currently editor of the podcast Vidas Negras: *"I don't see any platform that protects journalists as it should. It's always very time consuming and very difficult [to file a complaint]. Many times it's frustrating."*

Still, some of them said Twitter's filters allowed them to better shield themselves from attacks. Instagram, on the other hand, did not offer possibilities for journalists to block abusive content from their views.

"The worst attacks are on Twitter, but now they also appear on Instagram. And Instagram is worse, because you cannot silence the posts. After the 'massacre of Jacarezinho' [a police raid that resulted in 28 deaths in Jacarezinho favela, in Rio de Janeiro], I had to close my Instagram account. The platform's features allowing you to moderate content in your way affect your behavior a lot", explained Cecilia Oliveira, a journalist specialized in security coverage and founder of the app Fogo Cruzado.

In some cases the attacks were particularly painful because even family members would believe the hoaxes and would question the journalists' capacity to perform their job. On one occasion, left-wing supporters were unhappy with a fact-check performed by the organization and made enormous efforts to associate the fact-checkers to private interests, such as bankers. In the occasion, out of the fifteen people who worked for the agency, six received death threats, five of them are women and one, a gay man.

Patrícia Campos Mello also received attacks on private and semi-private spaces, such as direct messages (DMs) and on WhatsApp groups of which she was part. *"Attacks that arrived via DMs were always more aggressive. Messages sent via Facebook Messenger or direct messages on Instagram had the most aggressive and sexualized content. And I also received them on WhatsApp groups, such as the one gathering mothers at my son's school, it wasn't something coming only from Bolsonaro supporters."*

2.4_ The role of public authorities
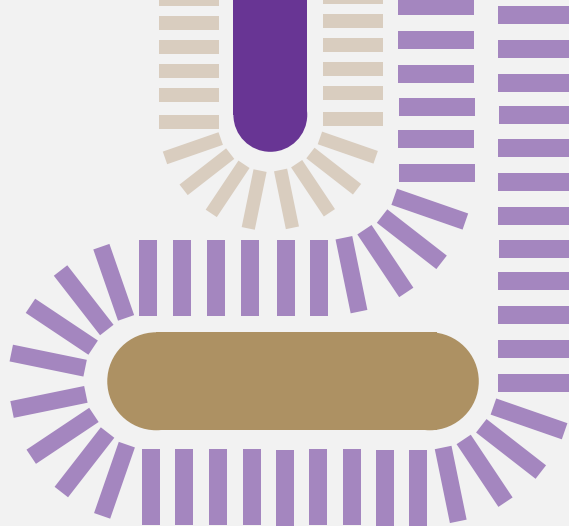
Many of the interviewed journalists said they felt that public authorities were often in the forefront of harassment against them, either starting waves of harassment or amplifying topics and making call-to-actions that resulted in more harassment. While in the presidency of Abraji, Daniel Bramatti saw many cases in which an authority would make a call to action to "activate" hordes of online users to harass a journalist.

Journalists mentioned Bolsonaro, his family and allies as the authorities most often involved in these attacks. Juliana Dal Piva, a journalist covering corruption in the Bolsonaro family, said Bolsonaro's sons Carlos and Eduardo have both mentioned and tagged her to criticize her work, which resulted in a series of aggressive posts. She noticed, however, that they would not do that when the article she wrote is about corruption, so that they don't amplify the topic among their audience. They prefer to do that in less relevant articles, related to the opposition or cultural reasons.

The interviewees also mentioned congresspeople, ministers and government authorities, hyper-partisan media, influencers, and other actors connected to the "bolsonarismo" as responsible for attacks. Cecília Oliveira, for instance, said Congresswoman Bia Kicis published the address and a picture of the façade of The Intercept Brazil headquarters after the outlet published a series of articles about the Car Wash operation. As a result, Intercept journalists asked to work from home, fearing physical attacks against them.

The participation of Bolsonaro and his family seems to be so important in this dynamic that - as mentioned - Cecilia Oliveira said attacks against her decreased significantly after she was blocked by Bolsonaro, his family, and his most important allies on Twitter. This could indicate that these people were important actors driving harassment against her. The perception is that usually there is a high ranking figure who will trigger the attack, and that a horde of supporters are on "stand-by" to follow the cue and attack the target.

One authority that was mentioned by black journalists, but not by white ones, was Sérgio Camargo, the Bolsonaro-nominated director of Fundação Palmares, a government foundation that is supposed to protect black heritage in Brazil. Pedro Borges said Camargo often screenshots Alma Preta articles to attack him, saying he is a "victimist" and a

"defender of criminals'." Camargo was also mentioned as a source of attacks by Flávia Oliveira, from Globo News.

An important issue that was signaled by the journalists was the "institutional" aspect of the current attacks, meaning that they came from public officials. Patricia Campos Mello mentioned that the power of mobilization is much different when it comes from a common individual than when it comes from the President. Authority weighs in the attack, the president has much more reach and the fact that he is considered a credible source gives him an appearance of more legitimacy and authenticity. The "official" aspect of the people who started the attacks appeared to make a significant difference and made the attacks much worse.

Sérgio Nascimento Camargo is a Brazilian journalist who, since 2019, has chaired the Fundação Cultural Palmares, a Brazilian agency for the promotion of Afro-Brazilian culture.

He frequently carries out conservative attacks against the black movement and the rights conquered by black people in Brazil, such as Dia da Consciência Negra (Black Awareness Day, in English)[15], which he calls "Dia da Vitimização Negra" (Black Victimization Day, in English), an important date that honors Zumbi dos Palmares, one of the main representatives of the black resistance to slavery, who died on that day, in 1695.

2.5_ Context of attacks

The idea that race and gender were important factors related to online harassment was prevalent among the interviewed journalists. Journalists also pointed to some topics, such as corruption, cultural issues, security, gender and race coverage, as triggers for the attacks they experienced.

Pedro Borges, for instance, says he experienced racist attacks that tried to connect him to criminality and questioned his education, as well as racist comments related to his hair. *"The attacks that I suffered are very specific. Comments would say 'this is a PCC [in reference to Primeiro Comando da Capital, an organized criminal group] journalist', or 'why did [former president] Lula make these people literate?'. Attacks are also about my hair… any offense that you can think about that is related to hair, I've heard it."*

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[15] https://g1.globo.com/politica/noticia/2021/11/20/presidente-da-fundacao-palmares-critica-dia-da-consciencia-negra.ghtml

Gender and sexual orientation also shaped attacks. Some women, such as Patrícia Campos Mello, suffered highly sexualized attacks. During the 2018 presidential elections, Mello reported on a massive and illegal dissemination of content through WhatsApp in Bolsonaro's election campaign. Soon after the article was published, Mello became the target of an intense and coordinated hate campaign. The harassment worsened and became even more intense in 2020, when one of the interviewees from the 2018 article insulted and made sexual insinuations against Mello before the Brazilian National Congress. After the false accusations, a new wave of attacks against the journalist started. President Bolsonaro and his sons (who are members of the legislature) made insinuations about sexual misconduct against Mello.

Tai Nalon, the founder of Aos Fatos, said she is often attacked by real and fake profiles that appear to be run by men and make reference to her short bangs. *"Incels connect short bangs to feminism, which they fight. I believe guidance to attack me in this show must have circulated in 4chan-like forums, because they are not attacks saying my bangs are ugly, it is more specific."*

Juliana dal Piva said attacks against her usually tried to imply she was young and did not have a lot of experience, which is also a common feature of gender-related harassment that tries to push the idea that women are not qualified for the job they are performing. *"99% of what I receive is people calling me names, many of them misogynistic, calling me a slut, or an intern."*

The topics that triggered attacks varied. Many journalists were called "criminal supporters" when covering security and urban violence issues. Topics related to "culture wars", such as historic revisionism and identitarian issues, also triggered attacks. Finally, those covering politics, economic power, and corruption, as well as fact-checkers, were often targeted online.

According to many of the interviewed journalists, what seem to trigger the attacks are topics that go against the Federal government. As criticism to the government's economic, security, social and cultural policies - including gender and race issues - are frequent, they are commonly mentioned as sources of attacks.

Previous research, published by UN Women, had pointed out that gender, politics, human rights and social politics were among the topics that most triggered attacks against journalists. The study interviewed 714 women journalists from 125 countries, showing that this is not only a Brazilian trend.

2.6_ Prevention of attacks

One of the main issues reported by the interviewees was the lack of security in their field,which comes from both the lack of institutional responses to protect journalism as a profession, and the lack of a safety mechanism for them to activate in case of harassment or threat.

All interviewees reported seeing accentuated attacks against social groups who have been historically marginalized. One interesting case was that of Cecilia Oliveira, who, though being a black woman reporting on public safety and local militias, seemed to have the situation slightly more under control. She explained that she received training to handle social media crises and attacks, and that this information changed the way she related to social media. She began blocking individuals pro-actively, sometimes even preventively, and that decreased a lot the attacks she received. Also, she said that she now systematically ignores comments and is only more concerned when more personalized and targeted threats come her way.

Regarding physical protection specifically, there was a perception that the authorities were unwilling or incapable of giving journalists better protection. Daniel Bramatti mentioned that reporting to the authorities was more of a "documenting act", which would serve as a register of that occurrence. That would inform professional organizations and NGOs later on that would pressure decision-makers. However, he and other journalists confessed having little to no hope that any report to the police about online harassment would lead to any legal consequence to the perpetrators.

Cecilia Oliveira gave her account: *"at the police station you have the feeling no one knows what they're doing, they don't seem to know what is a cyber attack… I had the feeling nothing would come out of it"*.

Oliveira mentioned the case of one harasser who sent death threats via email to her and a few colleagues, all women. All of them reported to the Police but it seemed that the perpetrator was too skillful in hiding his identity. For a while they attempted to bring the public attention to the attacks, but that only resulted in more incoming death threats. They decided to stop publicly reporting the threats since it seemed the aggressor was interested in the visibility coming from these attacks.

Similarly, Cristina Tardáguila faced severe threats during the 2018 elections and complained about the lack of support from electoral authorities. When discussing her situation with friends from the legal field, she was instructed not to seek out certain authorities for being at risk of walking straight into the hands of people who supported the aggressions.

Cristina Tardáguila reports receiving threats of stabbing and other forms of violent murder, and is aware of cases of people who were followed and threatened on the streets. She commented a bit on this insecurity and remembered that a large portion of Brazilian journalists face threats of physical harm in urban environments:
"there are amazing programs for journalists in situations of extreme danger, say at a warfront. Organizations don't have much to offer for someone who is in New York being harassed at a supermarket or falling victim of a cyber attack".

A similar lack of support is seen with regard to organizations and companies the journalists work for. Not many of them are willing to provide the journalists with legal support in case of backlash from a specific piece. At the same time, there are few safety mechanisms to protect journalists who are being verbally or physically harassed. According to Daniel Bramatti, there were a few cases of people who dropped out of the profession or stopped reporting on political issues due to the lack of support from their organizations.

That lack of protection results in the need for individual methods to prevent attacks. Flávia Oliveira, for example, said that she is thankful for her work as an activist, where she learned basic actions to protect herself against public attacks. She has a list of measures she takes each time she feels an attack might be coming. Those measures are related both to online and offline behaviors.

This leads to a second layer of insecurity which is the lack of legal protection. Many journalists are being systematically sued by rich individuals and organizations as a form of intimidation. Dealing with the costs and insecurity of a legal dispute is tough and troublesome, and there are "lawfare" strategies being used to generate additional costs to the defendants, such as filing lawsuits in distant parts of Brazil to oblige the journalist or organizations to displace themselves to defend their case.

The legal warfare has been reported by a few journalists and many of them say media companies, especially the regional and local ones, are not prepared to face these legal attacks, nor to protect the journalists when they fall victim to these strategies. In some cases, this sort of intimidation comes from public prosecutors who pressure journalists, by opening investigations and ordering hearings.

One interesting instrument of protection that was mentioned by Daniel Bramatti and Cecilia Oliveira was visibility and journalism itself. Especially for journalists reporting cases in rural settings or small towns in Brazil, where local powers have much more influence, having the visibility of the national media or large organizations provided protection for journalists reporting on the field, who would otherwise be harassed and threatened if there wasn't nationwide public scrutiny following a case they reported.

2.7_ Chilling Effect

The general perception is that nationwide journalism has not yielded to the repetitive attacks, though many individuals have been severely affected. There are many reports of psychological and even physical harm.

Some journalists have switched careers since they didn't feel they were safe or well-supported in the profession, especially to be handling personalized attacks. Even though people do recover from the attack, the scars and traces remain in the mind - and on the internet - forever. As mentioned, Campos Mello cited one attack she suffered in which perpetrators fabricated her involvement with a sexual scandal, trying to discredit her professionalism and her reporting. Despite the case having been sufficiently cleared out, the images and accusations that were widely spread over the internet are still around, and a simple Google search of her name might end up on the unfounded allegations.

Campos Mello also reported that the attacks affect more than journalists, also contaminating sources whose refusal to speak end up being a collateral damage from these attacks. Sometimes important sources are reluctant to cooperate, since they are afraid of the reputational backlash they might suffer. These indirect forms of intimidation also make it more difficult for journalists to work. As Campos Mello puts it, *"I don't stop from doing my investigative journalism, it's just that the cost of doing it is so much greater. It's as if journalists become toxic, people hide themselves to talk to us."*

Both Campos Mello and Cecilia Oliveira mentioned there were specific cases they were not allowed to talk about or appear related to in any way, due to ongoing legal disputes they have with the parties involved.

However, the chilling effects sometimes are far more subtle. As Cristina Tardáguila put it: *"Of course these things [the attacks] affect you. There are days you think about your family, the stress you might go through, and you might simply not be up for it."* The attacks and the pressure are so constant that it could be softly discouraging people or causing a form of hesitance.

3_
Cross-Platform
data analysis

To further understand how attacks against journalists were unfolding in Brazil, we combined qualitative, network and lexical analysis methods to investigate attacks on Twitter and YouTube, and also to check how and if it can be related to WhatsApp. First, we considered Twitter and YouTube separately. From a list of 200 journalists, we started to monitor their profiles on Twitter and a subset of YouTube videos (and their comments) related to some of these names. From the data found, we made some data crossings to understand how they related to each other, i.e., we searched for relationships between what we had found on Twitter and YouTube. At the same time, when analyzing WhatsApp groups, we tried to identify whether the considered events in the instant messaging application were related to what we were analyzing in the aforementioned platforms. In the topics below, we report what we found on each of the platforms and what we found in common between them.

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3.1_ Twitter Data Collection and Analysis Methodology

Seeking to build an analysis that would allow us to articulate social markers of gender, sexuality and race, we paid attention to include in the list of journalists to be monitored different gender, racial-ethnic profiles and sexual orientations. The list, which sought to mix journalists working in several vehicles of the Brazilian press, in different regions and, at the same time, in different stages of their careers, included 200 journalists. Among them, there were 133 women and 67 men. We had difficulty in finding racial-ethnic self-classifications and sexual orientation for each of them, resulting in a list composed mostly of white people, which to some extent reflects the low presence of black journalists in the Brazilian press. It was also difficult to find information about the sexual orientation of the journalists, but we carried out a search to include some journalists who talk about this aspect of their lives publicly. In any case, thinking about the composition as, from the beginning, related to the need to observe the articulations among the markers of gender, race and sexuality brought us important reflections and results during the analyses - which were also considered in conducting the interviews mentioned in topic 2.5 of this report.

Thus, the collection was carried out from May 15 to September 27, 2021. After surveying the journalists we would like to monitor, we built a lexicon of offenses as a first filter to guide data collection. Journalists were chosen whether because there were previously known cases of attacks against them on social network platforms, because of the importance of their work, or because we were convinced of the need to observe how lesser-known journalists could also be exposed

to online attacks. This list was validated through lexical analysis and clustering in different stages of the process, separating offenses in a non-filtered corpus and checking if the list was sufficient to grasp all relevant cases. This clustering method will be explained throughout this chapter.

We collected tweets and retweets that mentioned the monitored journalists and that contained at least one of the words present in the lexicon. The lexicon was built through different phases. In the first stage, we updated the lexicon developed by linguist Yasmin Curzi for MonitorA, a political violence observatory conducted by InternetLab and AzMina magazine in 2020. As the lexicon had been designed to monitor political violence against candidates, many of the words did not fit in the new research and many others needed to be included.

After testing the initial lexicon, we were able to refine it through qualitative analysis of the first collected tweets. We then included terms that had appeared during the analysis and removed false positives that increased the number of collected tweets. Our lexicon ended up with 54 terms (the '*' can represent either the gender desinence 'a' or 'o' present in adjectives in Portuguese, or, if there are two words, it can indicate the co-occurrence), listed below:

LIST	TRANSLATION	LIST	TRANSLATION
abortista	abortionist	depila*	shave
analfabet*	illiterate	descontrolad*	out of control
barang*	unattractive	dissimulad*	dissumulated
burr*	donkey	doente	sick
Cala boca	shut up	esquerdista	leftist
canhão	cannon	fdp	s.o.b.
cheiradona	sniffer (drug)	fei*	ugly
chupa	suck it	feminazi	feminazi
comunista*nojenta	nasty communist*	gord*	fat
dar * rabo	give * ass	idiota	idiot
demente	demented	imbecil	moron
demon*	demon	imund*	filthy

LIST	TRANSLATION	LIST	TRANSLATION
incompetente	*incompetent*	**quieta**	*quiet*
jument*	*donkey*	**raça*inferno**	*Race * hell*
metida*besta	*posh*	**ridícul***	*ridiculous*
meu* [z]ovo*	*my egg*	**s[ou]vaco*cabeludo**	*hairy*armpit*
mimizent*	*complainer*	**s[ou]vaco*depilado**	*hairless*armpit*
minha*pica	*my*dick*	**s[ou]vaco*peludo**	*hairy*armpit*
nojentinha	*nasty girl*	**sapatao**	*dyke*
peluda	*hairy*	**satan***	*satan*
pilantra	*scoundrel*	**suja**	*dirty*
piranh*	*slut*	**vagabunda**	*slut*
porca	*pig*	**vai*tanque**	*go*tank*
puta	*whore*	**velha*feia**	*old*bag*

We collected, in the mentioned period, 3,196,086 tweets and retweets mentioning women journalists and 3,886,861 tweets and retweets mentioning men journalists. When we disregard the RTs, we have 2,139,593 tweets mentioning female journalists and 2,509,691 mentioning male journalists. Therefore we collected a total of 7,082,947 tweets and retweets targeting men and women journalists.

3.2_ Twitter Analysis: gender, network of hashtags and textual analysis

After the collection was completed, we analyzed the tweets addressed to men and women separately. Since it was impossible to qualitatively analyze all the tweets and retweets mentioned, we chose to analyze only the tweets that had at least 5 likes and/or RTs as engagement. The manual analysis was important to remove 'false positive' tweets that could have been incorporated by containing words that appeared on the lexicon, but that referred to a different context or that were not in fact offensive.

To make sure that there was a common understanding between the researchers of what constituted offenses and what was mere criticism, we initially analyzed the first one hundred tweets together. In addition, the tweets that had more complex contexts and could not be easily labeled by one researcher alone were analyzed by at least two.

With regard to women journalists, we manually analyzed 4,997 tweets, of which 84.07% (4201) had no offensive content and 15.93% (796) were offensive. As far as men journalists are concerned, we manually analyzed 4,187 tweets, of which 91.40% (3827) were non-offensive and 8.60% (360) were offensive. As we expected, in dialogue with other comparative research involving attacks directed at men and women[16], as MonitorA itself, the amount of offensive tweets directed at women is higher than the offenses directed at men.

The ten most attacked journalists were:

Eliane Cantanhêde	134	**11,59%**
Vera Magalhães	129	**11,16%**
Guga Chacra	114	**9,86%**
Miriam Leitão	103	**8,91%**
Daniela Lima	98	**8,48%**
Mônica Bergamo	95	**8,22%**
Reinaldo Azevedo	60	**5,19%**
Cláudio Dantas	53	**4,58%**
Cynara Menezes	46	**3,98%**
Gerson Camarotti	34	**2,94%**

In the list above, it is notable that the most attacked journalists have better established and nationally recognized careers. We have six women and four men on the list of those who have been most attacked. When looking at the terms used, it is important to mention that some of them were directed at the journalist profession , being common to both men and women. This is the case of: "jornazista" (the combination of the words journalist and nazi), "militante" (as a pejorative way to refer to journalists treating them as 'activists'), and "parcial" (biased).

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[16] https://www.internetlab.org.br/en/inequalities-and-identities/online-violence-hinders-womens-political-representation/

There were, however, terms more specifically used against women, such as: "comunista" (communist), "ridícula" (ridiculous), "fraca" (weak), "louca" (crazy), "escrota" (bastard), "mulherzinha" ('little woman' in a pejorative way) e "fica quieta" (be quiet). The most frequent offenses directed at men were: "canalha" (scoundrel), "imbecil" (imbecile) and "idiota" (idiot). In some cases, it was also possible to observe differences in the way a specific offense was directed at men and women. In the case of the word "interpretação" (interpretation), it appeared when women journalists were accused of not knowing how to interpret texts or political conjunctures, while for men it appeared more frequently when a user quoted the journalist to defend him from someone who, supposedly, had not understood the story.

Some terms like "**communist**" beforehand seem to have no offensive content. However, when analyzed qualitatively, we observe its use in speeches that offend journalists who are seen as communists, i.e., it is not just a way of ideologically qualifying journalists, but of placing them as subjects who are easy targets for attacks. Also, commonly "communist" does not appear alone, but combined with other words like "abortionist communist (comunista abortista)", "shit communist (comunista de merda)" etc. Terms such as "communist" reveal the importance of human and contextual analysis of the attacks suffered by journalists, because initially "communist" is not a term considered illegal or injuring by the platform's terms of use. Because of that, it is important to mention the fact that in some cases only the human eye will able to perceive the insult and the context[17]. It is worth mentioning that the term is used by Bolsonaro supporters to label their enemies as untrustworthy.

When comparing men and women journalists, we noticed that the offenses directed at women were more aggressively related to their ideologies, their intellectuality, and more often questioned their ability to exercise their profession. Men, on the other hand, even when they performed analyses of political events, received more offenses directed at their profession and less at themselves as a person. Still, in comparison, we notice that Twitter users interact more with the content posted by men, arguing and, in some situations, defending them from other users. In other words, the attacks on women tend to be more direct and personal[18].

In the tweet below, a user can be seen reacting to a publication by journalist Eliane Cantanhêde. When talking about the possibility of former president Lula reacting to President Bolsonaro's threats of a coup, she responds by insinuating that the journalist decided to write in a newspaper while being drugged.

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[17] https://www.internetlab.org.br/en/inequalities-and-identities/online-violence-hinders-womens-political-representation/
[18] We plan to develop case studies that allow us to look deeper into this comparison between female and male journalists. At this moment, it is a preliminary observation done during the analysis of tweets.

Figure 1. Offensive reaction to Cantanhêde's tweet

In the second tweet selected to exemplify the type of offense that women journalists suffer, a user says that Vera Magalhães is out of control, later ironically correcting himself by adding that she has messy hair.
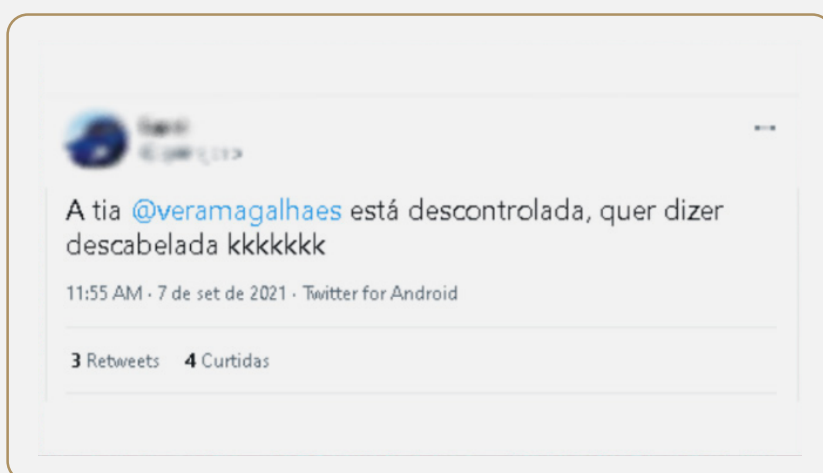

Figure 2. Offensive reaction to Vera Magalhães's tweet

In contrast, we noticed a tweet in which two users reacted to a publication written by Reinaldo Azevedo, columnist at Folha de São Paulo. The first disagrees with the journalist and the second defends the journalist, saying that the first is the illiterate person described by Azevedo in his tweet. Even though there are only three examples, we are facing the tone that is most often used for women and men. In general, even when users disagree with men journalists' agendas, there is a tone of respect towards them, while, in the case of women journalists, offenses are more easily directed at their bodies, intellectuals and morals.

Finally, it is also important to mention that, when analyzing the tweets, we realize that journalists are offended by users who are positioned in different political spectrums. Although we have not quantitatively measured this data, we risk saying that we corroborate what was said by the journalists in the interviews: they are not only attacked by conservative users or progressive users, but by different users according to the context. The offenses seem to be, therefore, part of how the communicative dynamic takes place on Twitter, a kind of language that needs to be fought and, even, surpassed through awareness of the users of the social network.

Figure 3. Dialogue between users about Reinaldo Azevedo's tweet

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3.3_ Methodological Notes

In what concerns network analysis methods, we built different network graphs based on two kinds of data: network of Twitter hashtags based on co-occurrence of hashtags in tweets combining a list of attack terms and journalists' names, and networks of recommendation based on videos mentioning a list of journalists, in which YouTube videos are nodes and related/recommended videos are connected. These graphs allowed us to use network algorithms to identify clusters (highly interconnected videos and hashtags) related to harassment targeting journalists, their vocabularies, gender and race dimensions, connections to other topics, and the connections among actors fostering this kind of attack on both platforms. The network graphs and their centrality measures enabled us to track recurrent starting points for attacks, and understand the spread of influence operations. Finally, we used network analysis and lexical analysis algorithms based on both Python and R programming language for the identification of harassments, clusters/communities and their centralities in different networks.

YouTube and Twitter were combined (using lexical analysis measures suitable to both networks) associating cross-platform tactics and vocabularies related to posts and comments. We employed a lexical analysis based on divisive hierarchical clustering (R language), trying to identify the vocabularies and perspectives involved in this debate, and also if/how they intersect (considering the networks separately and combining them in a specific cross-platform topic). The specific features of each platform will be explained in detail in each topic below.

3.4_ Co-occurrence of hashtags on Twitter

By checking the co-occurrence of hashtags among tweets identified using the regular expressions described earlier, we composed a bipartite network graph, in which hashtags and users are nodes and tweets containing hashtags connect them. Bringing diverse hashtags closer to the groups of users tweeting them over time enabled us to check how different topics and campaigns can be correlated. After that, we looked for diverse clusters (hashtags and users grouped together) and analyzed how they could help us understand the identified scenario.

All tweets composing this network involve the use of terms related to attacks and mentions to at least one journalist on our list. As a result, on the graph below, we found hashtags clearly hostile to the news media outlets Globo (#GloboLixo) and CNN (#CNNLixo), closely related to hashtags supporting Bolsonaro's campaign for president in 2022 (#Bolsonaro2022 and #BolsonaroAte2026), characterizing the top of the network graph below. On the right side of the graph, we can see hashtags against electronic voting (part of Bolsonaro's agenda used to attack the Superior Electoral Court). Close to the center of the network graph, we can see hashtags against the Parliament Inquiry Committee on the Pandemic (#CPIdoCirco) side by side with the bigger hashtag supporting Bolsonaro candidacy on 2022 (#BolsonaroPresidenteAté2026). On the left side, a bit disconnected from the hashtags mentioned above, we can see a cluster related to opposition against Bolsonaro (#ForaBolsonaro and #ForaBolsonaroGenocida) and other related to the Parliamentary Inquiry Committee on the Pandemic (#CPIdaCovid).

President Bolsonaro frequently attacks democratic institutions, including those that guarantee the fairness of the Brazilian electoral system. In relation to electronic voting machines, he frequently claims that they are unreliable and have been subject to fraud in previous elections - allegations for which he has no evidence and that have been repeatedly denied by the Superior Electoral Court[19].

In April 2021, the Brazilian National Congress established a Parliament Inquiry Committee, known as the "CPI da Covid-19", to investigate actions and omissions of the federal government in confronting the Covid-19 pandemic and the health collapse in the state of Amazonas at the beginning of that year. Due to the commission's focus on the federal government, Jair Bolsonaro, his sons and supporters had it as the target of attacks throughout the period in which it took place[20].

[19] https://g1.globo.com/politica/noticia/2021/09/09/ponto-a-ponto-barroso-rebate-ataques-contra-o-tse-e-as-urnas-eletronicas-durante-atos-antidemocraticos.ghtml

[20] https://www.correiobraziliense.com.br/politica/2021/04/4921253-integrantes-da-cpi-da-covid-reclamam-de-perseguicao-nas-redes-sociais.html
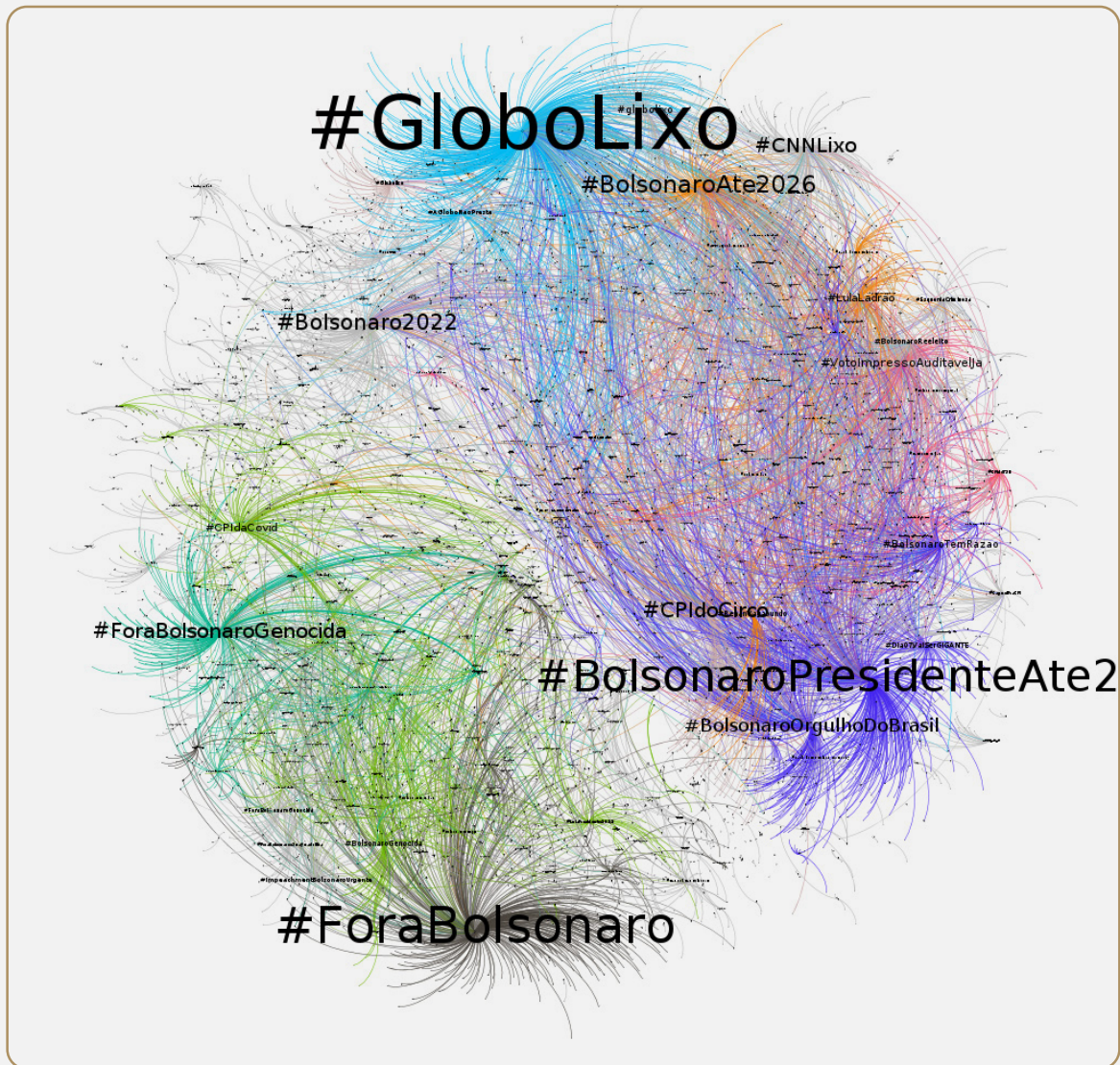
Figure 4. Bipartite network graph connecting hashtags and users on Tweets associated with our regular expression.

Considering the hashtags, therefore, it is clear that attacks against journalists on Twitter are directly related to issues around President Jair Bolsonaro, either involving the Inquiry Committee which he publicly attacks or his candidacy next year, bringing hashtags hostile to media outlets close to these two agendas. People supporting journalists also participate in the discussion, sometimes using offensive terms against Bolsonaro supporters, others mentioning these terms to denounce the way journalists are being treated. We dealt with these types of nuances in our qualitative analysis and we also connected them with the dynamics that were mentioned by the interviewed journalists.

To deal with the fact that part of our sample may contain tweets not related to attacks against journalists (despite using words from the list and mentioning journalists), we made two different lexical analysis: one considering the entire corpus and another based the aforementioned sample which was manually analyzed and codified by researchers, guaranteeing that all tweets involved in the second case are attacks directly targeting journalists on our lists.

The aim of our first lexical analysis on Twitter was to check which kinds of attacks are present in our corpus and to what extent there was a gender bias - also considering how it relates to other features, such as race.

First, using hierarchical divisive clustering we could find thematic attacks divided by six different topics: minorities on class 6 (negro/black, mulher/women, indígena/native Brazilian, racismo/racism, estupro/rape), sexual terms on class 5 (puta/slut, viado/fag, chupador/sucker, cu/ass), anticommunism on class 4 (comunista/communist, esquerda/left, Cuba, Venezuela, corrupto/corrupt, bandido/bandit), professional competence on class 3 (parcial/biased, travestido de jornalista/cross-dressed as journalist, manipulador/manipulator, partidário/partisan), lack of intellectual capacity on class 2 (analfabeto/illiterate, analfabeto funcional/incapable of interpreting, ignorante/ignorant, burro/dumb, demência/insane), and other strain involving lack of intellectual capacity (imbecil/imbecile, ridículo/ridiculous, "jornazi"/"journazi", idiota/idiot, retardado/retarded).

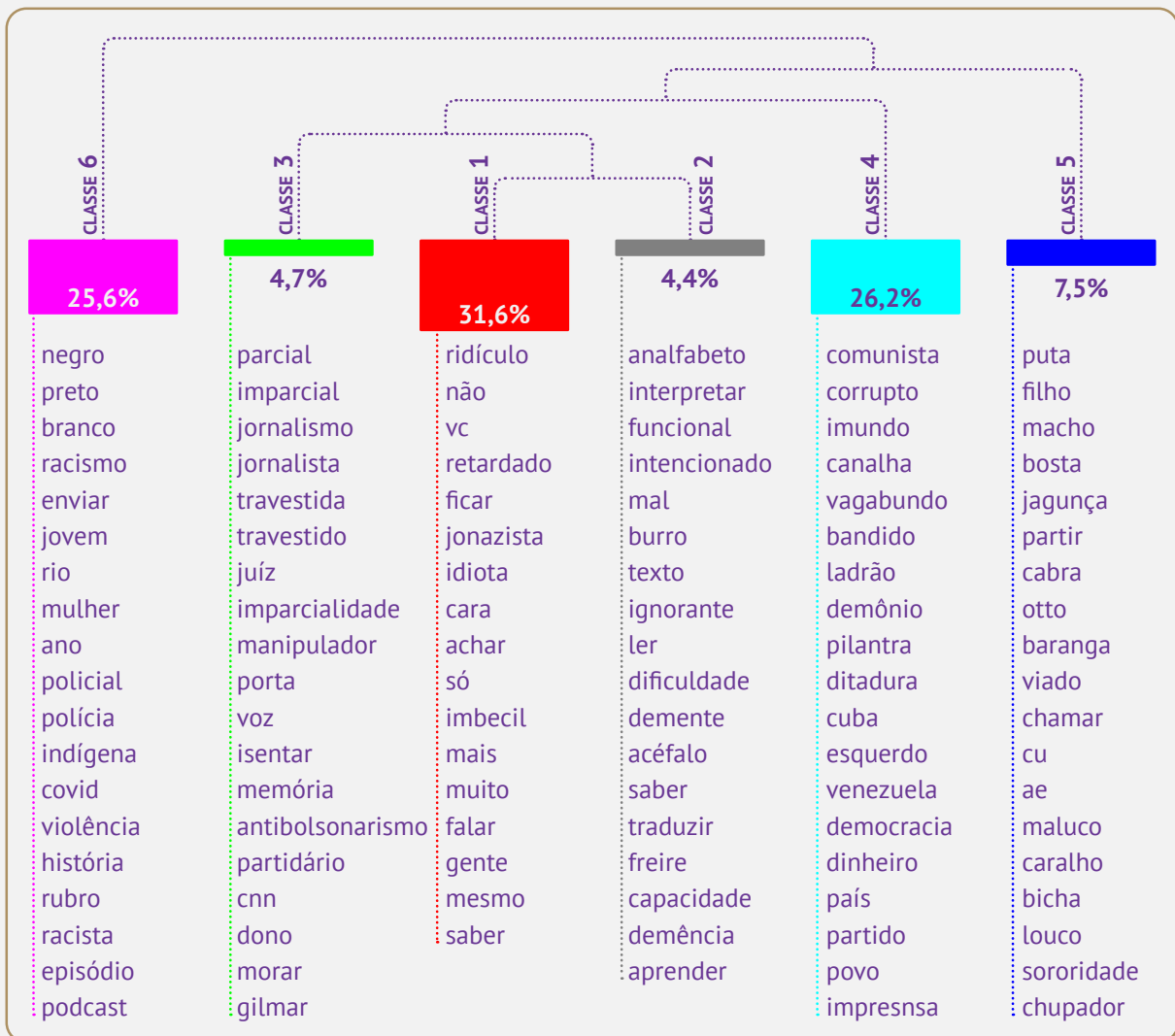| CLASSE 6	CLASSE 3	CLASSE 1	CLASSE 2	CLASSE 4	CLASSE 5
25,6%	4,7%	**31,6%**	4,4%	**26,2%**	7,5%
negro	parcial	ridículo	analfabeto	comunista	puta
preto	imparcial	não	interpretar	corrupto	filho
branco	jornalismo	vc	funcional	imundo	macho
racismo	jornalista	retardado	intencionado	canalha	bosta
enviar	travestida	ficar	mal	vagabundo	jagunça
jovem	travestido	jonazista	burro	bandido	partir
rio	juíz	idiota	texto	ladrão	cabra
mulher	imparcialidade	cara	ignorante	demônio	otto
ano	manipulador	achar	ler	pilantra	baranga
policial	porta	só	dificuldade	ditadura	viado
polícia	voz	imbecil	demente	cuba	chamar
indígena	isentar	mais	acéfalo	esquerdo	cu
covid	memória	muito	saber	venezuela	ae
violência	antibolsonarismo	falar	traduzir	democracia	maluco
história	partidário	gente	freire	dinheiro	caralho
rubro	cnn	mesmo	capacidade	país	bicha
racista	dono	saber	demência	partido	louco
episódio	morar		aprender	povo	sororidade
podcast	gilmar			impresnsa	chupador

Figure 5. Genealogy (hierarchical clustering) of vocabularies found in our Twitter sample, showing distances among them

Before going deeper in this analysis we need to note that, as mentioned earlier, part of the terms were used in contexts other than direct attacks against journalists. Therefore, we proceeded with a new analysis based on a more specific corpus (using a minimum engagement threshold of 5 likes), tagging it qualitatively and separating only the tweets related to attacks. We see the patterns repeating themselves, with anticommunism (class 4), left-leaning journazis (class 3), mental capacity mixed with moral judgment (class 1) and lack of professionalism (classes 5 and 6) being key points on the new classes found. Except for 'whore', sexual related terms do not seem to bring enough engagement to surpass our threshold with enough frequency to influence the found lexical patterns.
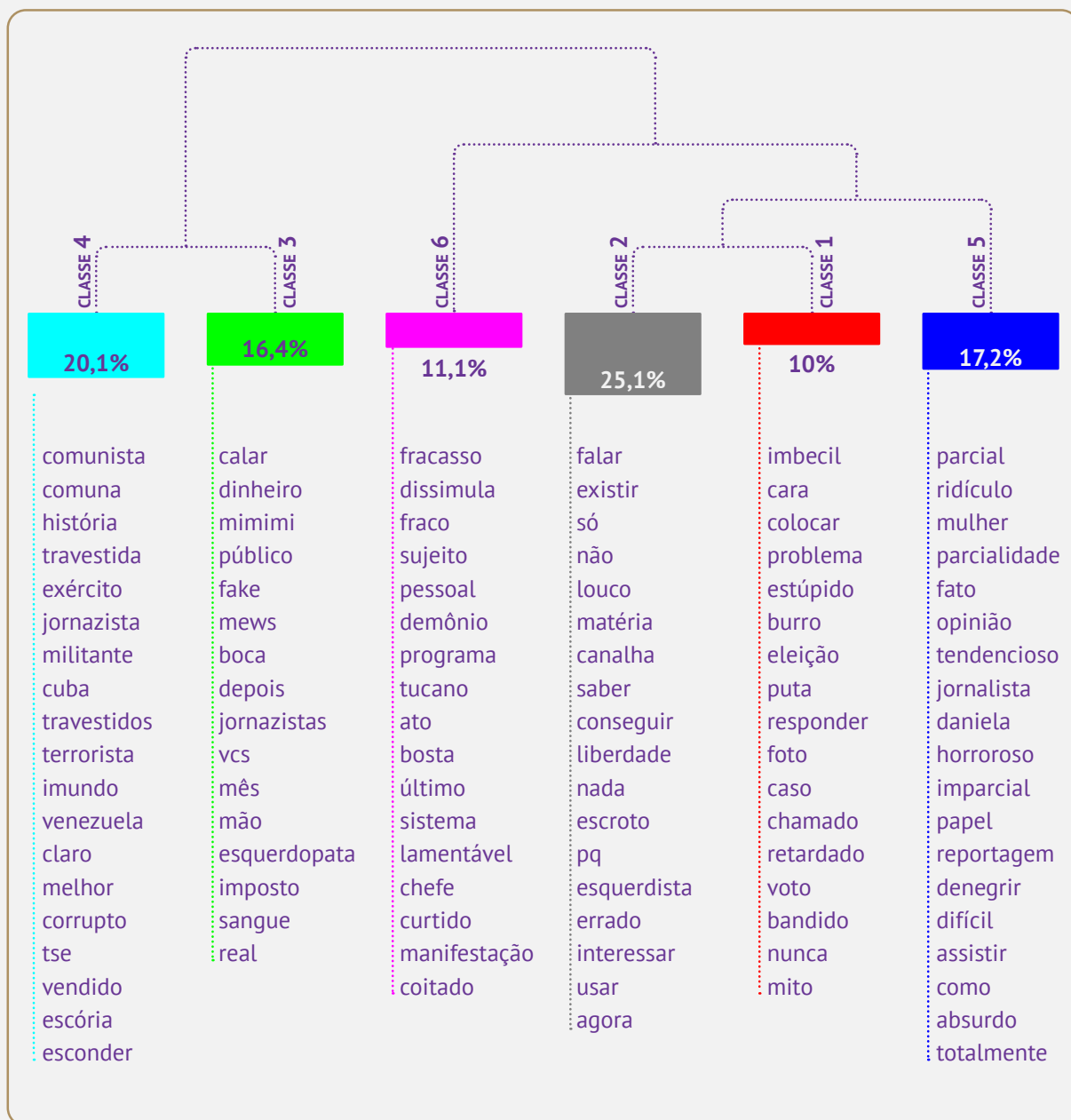

Figure 6. Genealogy (hierarchical clustering) of vocabularies found in our Twitter sub-corpus, showing distances among them

Regarding gender and race, these vocabularies were not used equally against the journalists, but followed clear segmentations. In the image below, categories (gender_race) that have similar vocabularies (i.e. similar texts in tweets referring to them) appear together, and the ones that have diverse vocabularies appear separated. White men and women are close to each other, while distant from black men, black women and Asian women. Black men are more often close to terms "losers", "weak", "shit", "poor man", while white men are more often closer to "imbecile", "stupid", "dumb", "retarded" (see Figure 8). Black and Asian women are closer to the terms "biased", "partial" and "ridicule", while white women are closer to anti-communist terms and are also called "terrorists" (opposers of Brazilian 1964 dictatorship were treated as terrorists and tortured, including women journalists that still cover politics), "journazi" and other similar terms. It is possible to think that having different terms close to white men and black men, as well as non-white and white women, points to the need for a deeper look at the way gender and race are articulated, bringing to light the importance of not universalizing male and female experiences.
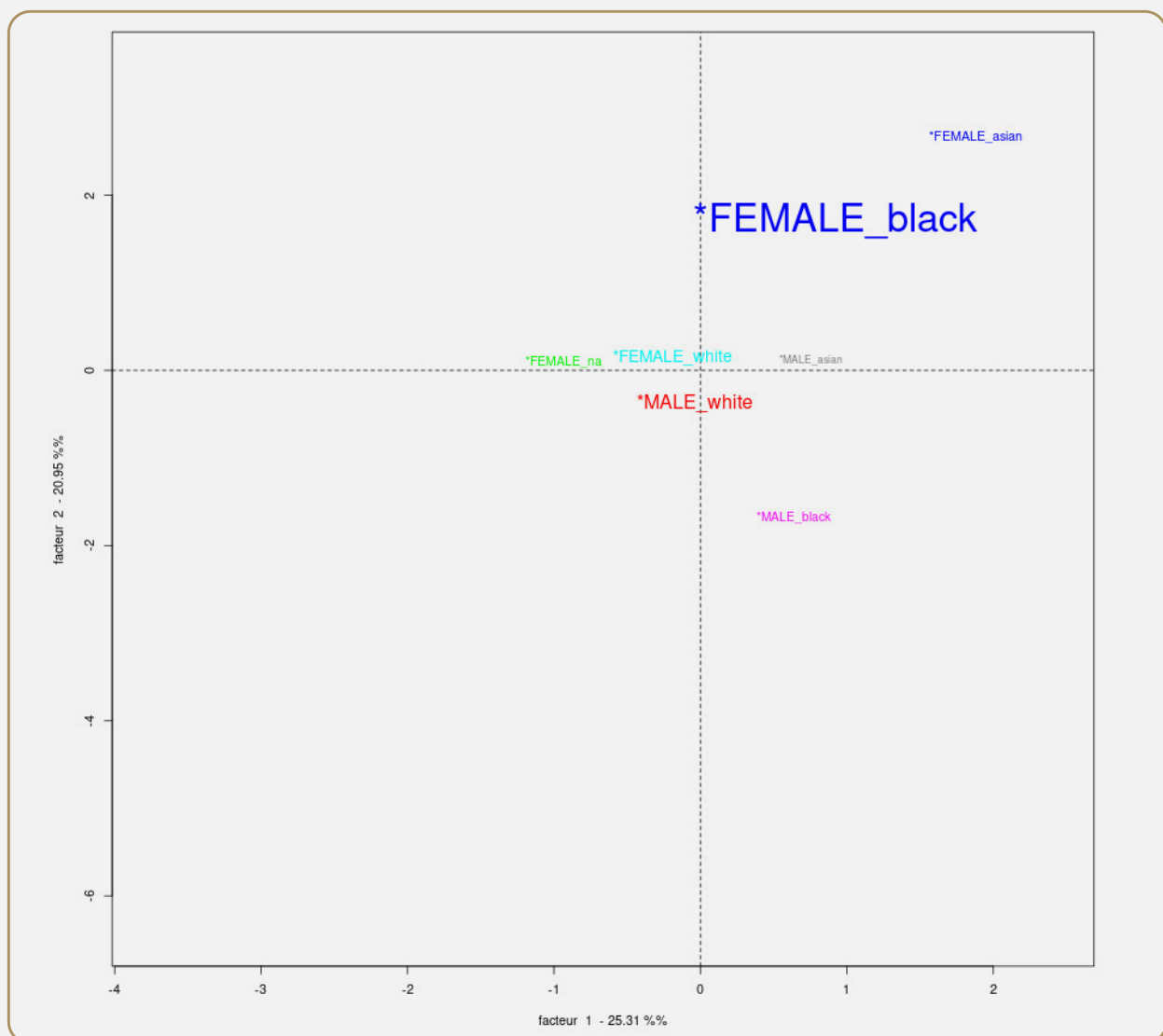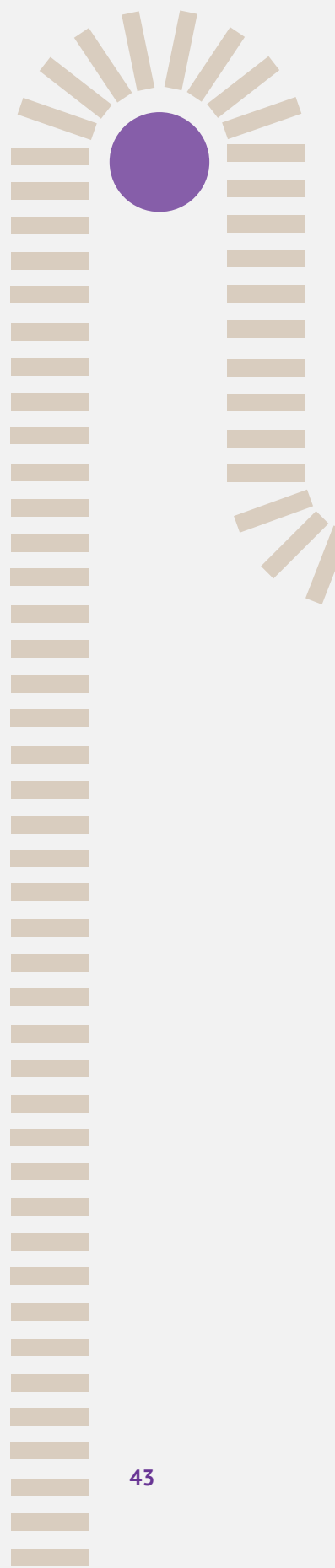

Figure 7. Distances and proximity among the mentioned categories (factorial correspondence analysis) in our Twitter sub-corpus

One of the points that deserve more attention is the difference in support coming from other users received by women and men. In preliminary observation, while men journalists who deal with issues related to the political situation received more explicit support, with users defending them, women rarely received the same kind of support. An example is the use of the term "to interpret", constantly used to say that women journalists did not know how to interpret texts and, on the other hand, used by some users to say that those who were criticizing men journalists did not know how to interpret texts.

The dynamic is similar with black journalists. Racist terms were commonly found on tweets directed at black women journalists to offend them, while in the case of black men journalists, we noted that the words were used to repeat terms being denounced and offering support to black men. These analyses have not yet been quantified; we are talking about preliminary observations that will be deepened in a new look over the collected data.

In this sense, an important difference to be made is that on our first analysis, considering all the corpus, black men and black women journalists present more convergences, which does not happen when we qualitatively separate tweets related to attacks: it can be an indicator that black men receive tweets mentioning words used in attacks either to condemn these attacks or to use them against Bolsonaro supporters, while the same is not true when it comes to black women . This hypothesis, though, needs further investigation to confirm to which extent it really happens on the entire corpus. Below, we present the image related to factorial correspondence analysis made considering only the tweets qualitatively tagged as attacks.

There is a blurred zone among the terms composing diverse classes/vocabularies, showing words that could be a bridge among the diverse categories identified. It is worth mentioning that the fact that two words appear in the same color (image below) does not mean that they are used in the same way. In the following image, we can see the location of each word, also located according to its distance or closeness to other words, and bringing colors presented in the previous image indicating the target journalist's gender and race.
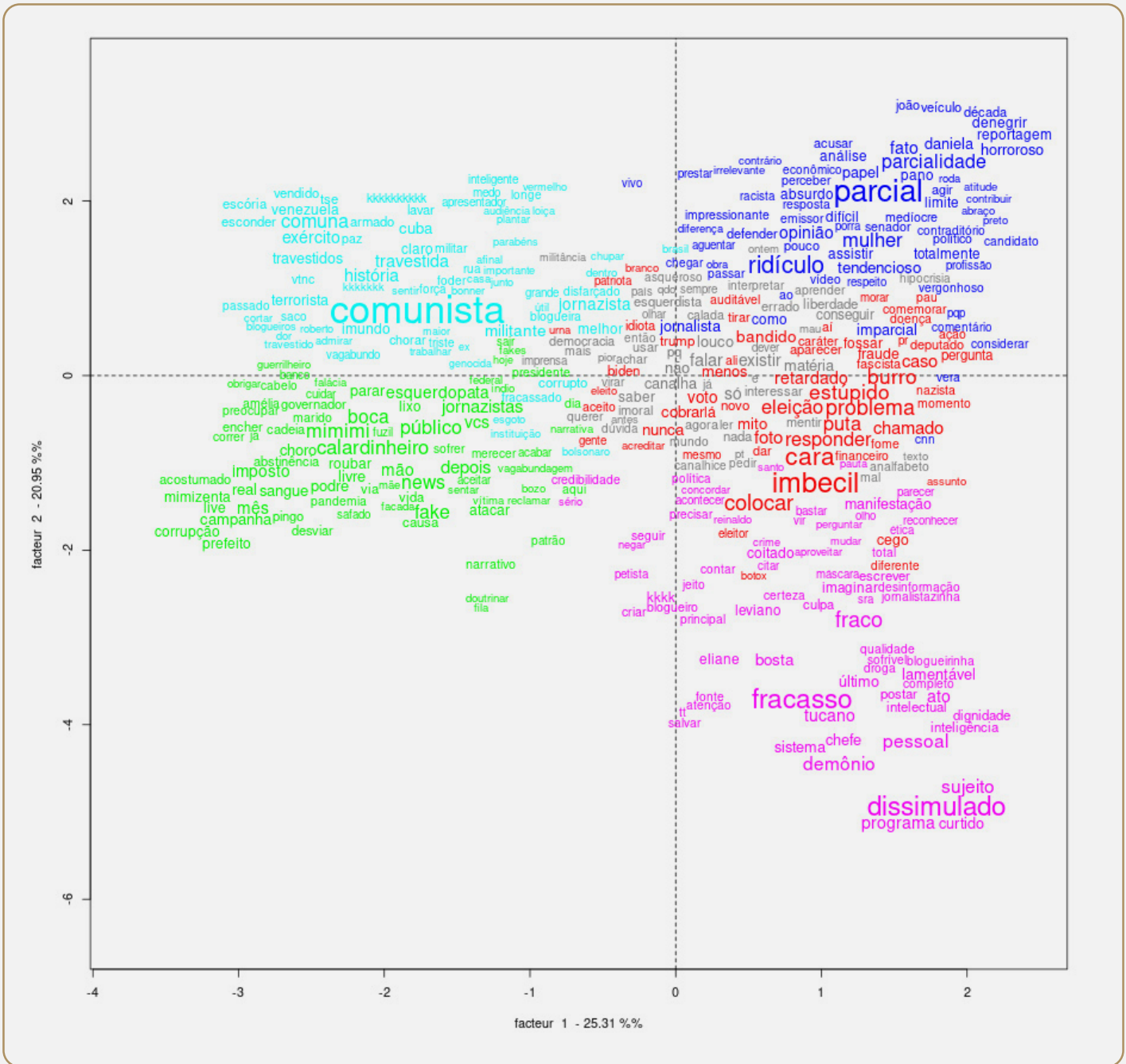
Figure 8. Distances and proximity among the words according to co-occurrence (factorial correspondence analysis) in our Twitter sub-corpus

We will deepen this analysis on the next topics, in which the Twitter findings are related to the ones identified on YouTube.

3.5_ YouTube Data Collection and Analysis Methodology

Every day between 1 May and 27 September, 2021, we collected data related to the 500 highest ranked videos by YouTube search results' algorithm (in cases in which there were 500 results or more) based on the list of the selected journalists' names. These daily collections were combined into a single corpus, with 70,000 rows of information containing the metadata of 6,000 unique videos appearing in search results during this period. The high proportion of homonymous brought a lot of noise in our first tests and we decided to limit this daily data collection to a list of 16 main names (which make up a database with the engagement variation of all related videos for each day of the analyzed period, including videos excluded in this interval). Considering the list of 200 journalists monitored on Twitter, the ones selected (more likely to bring related videos according to our initial data collection tests) were:

Patrícia Campos Mello	**Miriam Leitão**	**Glenn Greenwald**
Talita Fernandes	**Mônica Bergamo**	**Reinaldo Azevedo**
Vera Magalhães	**Maju Coutinho**	**William Bonner**
Marina Dias	**Maria Lúcia Coutinho**	**Guga Chacra**
Constança Rezende	**Guilherme Amado**	
Juliana Dal Piva	**Leonardo Sakamoto**	

Considering the relevance of dislike campaigns (one of the favorite online repertoires of Brazilian far-right) on YouTube, we assumed that this may be a good indicator to find comments related to attacks against journalists. Our first exploration of the corpus involved collecting all the comments on videos in which the average number of dislikes exceeds the average number of likes in the analyzed period, resulting in a corpus with about 42,000 comments.

President Bolsonaro's supporters often coordinate **dislike campaigns** in videos with content that is contrary to their positions, such as the use of electronic voting machines[21]. Campaigns like these are frequent and harmful, but might be less prone to happen now that YouTube has hidden the number of dislikes contained in videos from the platform. The action took place to avoid a "herd effect" of users who dislike videos because of the large amount of dislikes contained in it, therefore protecting mainly small content creators[22].

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[21] https://www.metropoles.com/brasil/bolsonaristas-fazem-campanha-de-dislike-em-video-do-tse-sobre-urna-eletronica

[22] https://blog.youtube/news-and-events/update-to-youtube/

From the composition of this text corpus, we submitted the comments to textual analysis using clustering methods to progressively isolate vocabulary containing swear words and offensive terms, differentiating them from polite comments. Upon arriving at a homogeneous corpus marked by variations of swearing, we used hierarchical clustering methods and factorial correspondence analysis to identify (a) the variations of swearing present in video comments related to the journalists analyzed, and (b) how these words can be located in terms of similarities or differences in the way they are used in diverse comments.

3.6_ YouTube Data Analysis

The hierarchical clustering brought us five vocabularies divided into two keys with similar proportions. With the exception of a small vocabulary mixing expressions such as "gado/cattle" (class 2) with variations of the word "dislike", probably associated with the dislike campaigns mentioned above, all the identified vocabularies are marked by swear words directed at journalists. The largest of them (class 1) brings curses to the TV channel Band and the newspaper Folha de São Paulo (besides generic terms like media and press), associating their names to the word "podre" (putrid), "mentiroso" (liar), "militante" (militant), "tendencioso" (biased), besides more specific expressions like "furo" (hole), used with sexual connotation to attack women journalists (the proximity with Folha de São Paulo is due to the fact that different political figures have encouraged this type of insinuation against the renowned journalist Patrícia Campos Mello, who works at this media outlet).

A twin vocabulary (class 3) brings swear words like "lixo" (trash) and "esgoto" (sewage) associated with other groups like Globo, UOL, CNN and, to a lesser extent, Band, along with "falir" (bankruptcy), "desinformação" (disinformation) and other words that indicate lack of credibility or lies. In the upper key, another vocabulary (class 5) is marked by curses directed at journalists, such as "vagabundo" (tramp), "comunista" (communist), "canalha" (scoundrel), "puta" (whore), among others. As we will see below, this vocabulary concentrates several explicitly or implicitly sexual slurs that mark attacks made by radical conservatives in Brazil.

Finally, in the other key (along with the vocabulary linked to dislikes) we have a vocabulary marked by references to men's names (like Reinaldo and Sakamoto, two journalists from different sides of the political spectrum) and curses such as "idiota" (idiot), "babaca" (asshole), "imbecil" (imbecile), "puxa-saco" (bootlicker) among others (class 4).
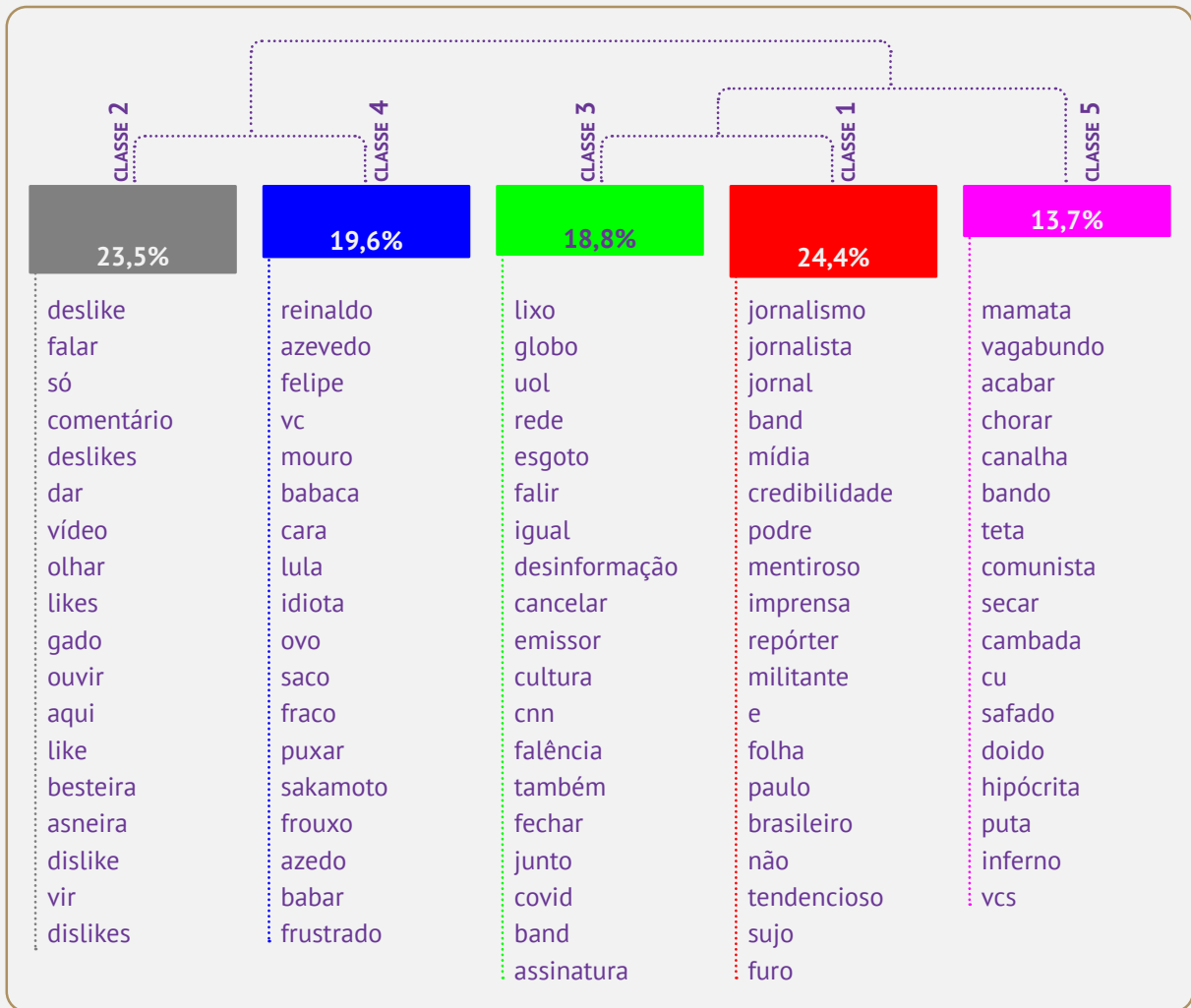
CLASSE 2	CLASSE 4	CLASSE 3	CLASSE 1	CLASSE 5
23,5%	**19,6%**	**18,8%**	**24,4%**	**13,7%**
deslike	reinaldo	lixo	jornalismo	mamata
falar	azevedo	globo	jornalista	vagabundo
só	felipe	uol	jornal	acabar
comentário	vc	rede	band	chorar
deslikes	mouro	esgoto	mídia	canalha
dar	babaca	falir	credibilidade	bando
vídeo	cara	igual	podre	teta
olhar	lula	desinformação	mentiroso	comunista
likes	idiota	cancelar	imprensa	secar
gado	ovo	emissor	repórter	cambada
ouvir	saco	cultura	militante	cu
aqui	fraco	cnn	e	safado
like	puxar	falência	folha	doido
besteira	sakamoto	também	paulo	hipócrita
asneira	frouxo	fechar	brasileiro	puta
dislike	azedo	junto	não	inferno
vir	babar	covid	tendencioso	vcs
dislikes	frustrado	band	sujo	
		assinatura	furo	

Figure 9. Genealogy (hierarchical clustering) of vocabularies found in our YouTube comments

Figure 10. Probabilities of words related to sex appearing in each vocabulary found in our YouTube comments
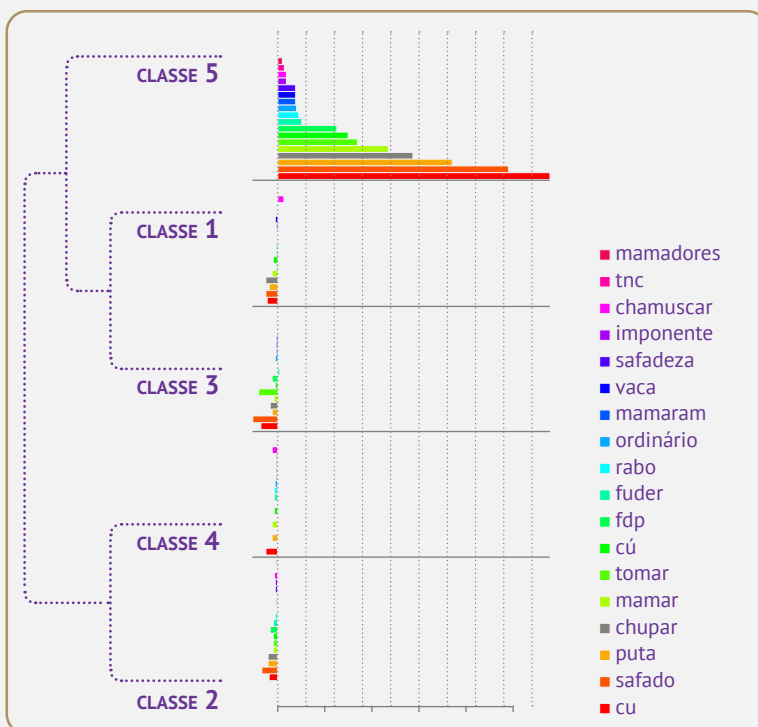
When comparing the presence of words like "puta" (whore) and "vaca" (cow), as well as expressions like "tomar no cu" (take it up the ass), we notice that there is indeed a concentration of terms directly or indirectly related to sexual offences in a specific vocabulary (the words in the caption appear in the order of the image, that is, ascending order).

Phrases like "Bolsonaro's credibility has come out scorched" are responded to with sexual related implications using the term "scorching", as well as variations involving anal sex. Journalists are singled out as "suckers" who would only attack the government because they have lost access to the "state's teats". "Whore" and "cow" are recurrently used to disqualify women journalists.
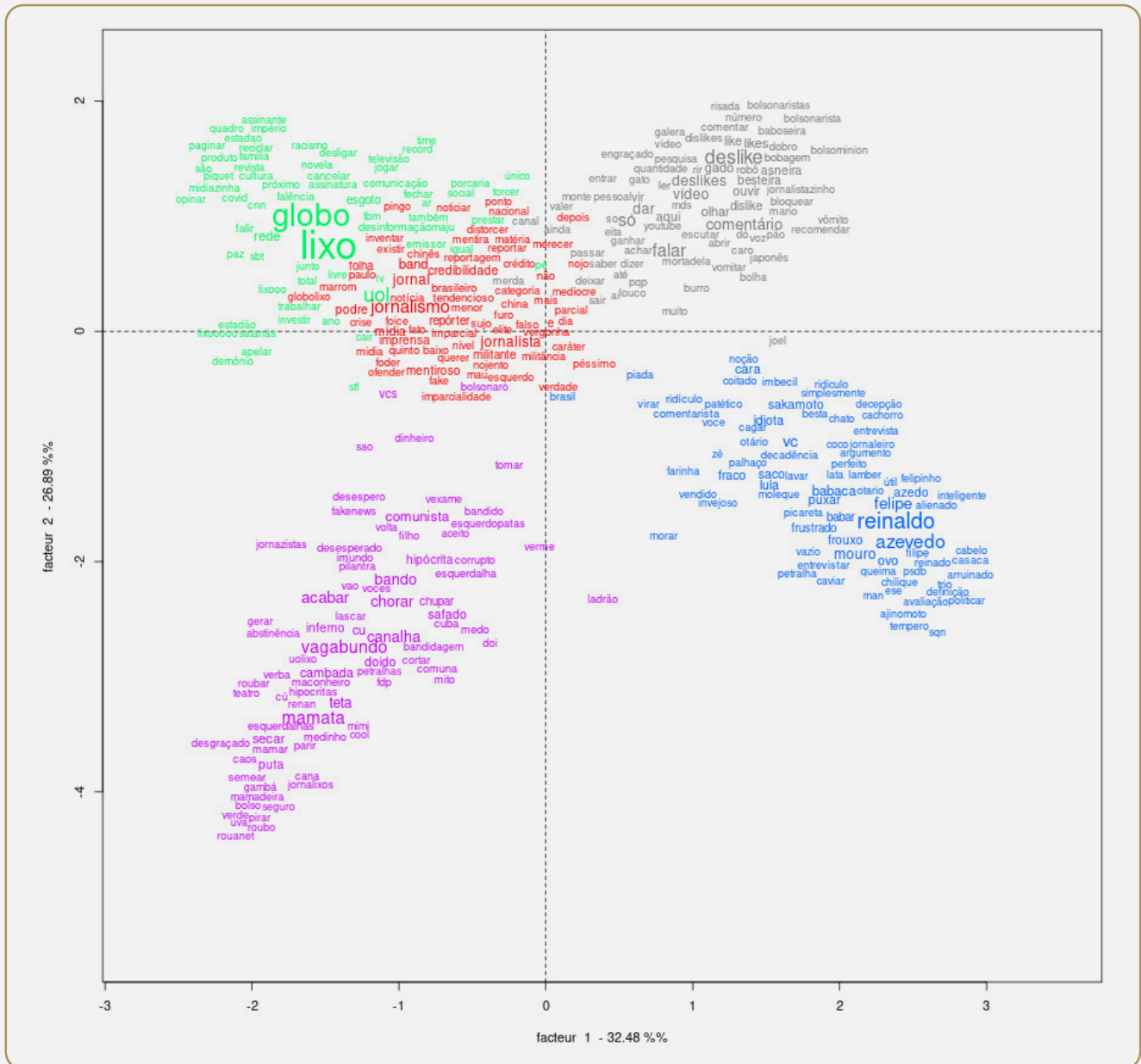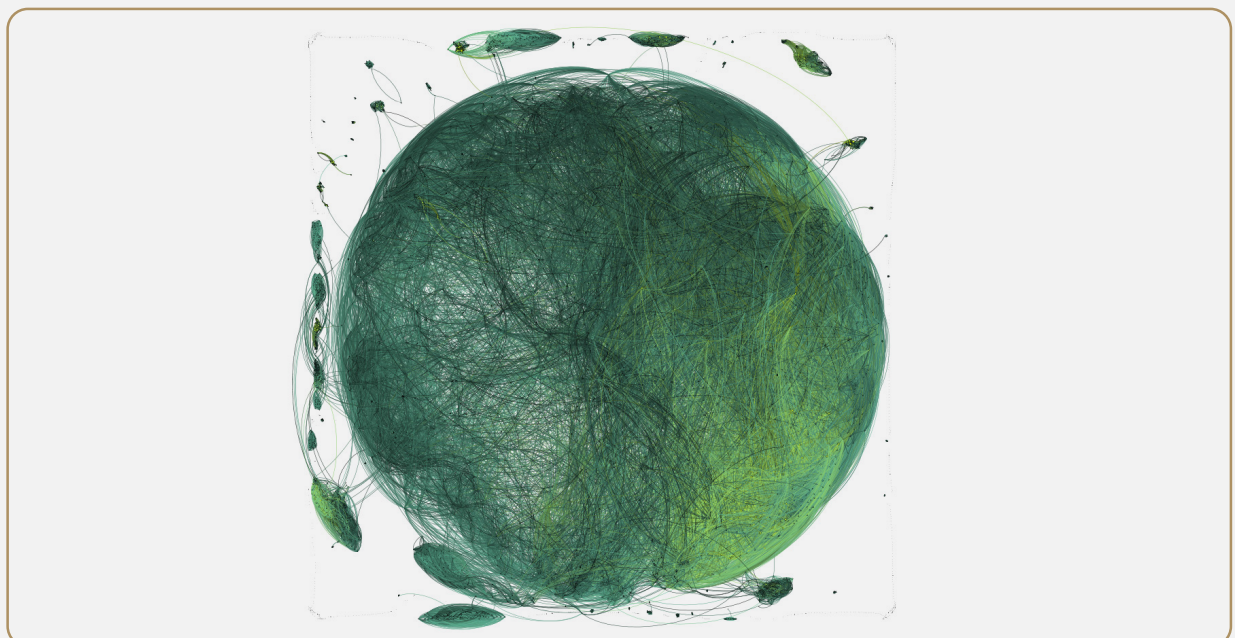

Figure 11. Distances and proximity among the words according to co-occurrence (factorial correspondence analysis) in our YouTube comments

It is worth mentioning that, along with these insults that make up a clear sexual vocabulary, there are insults related to specific situations, such as the term "terrorist", used specifically against journalist Miriam Leitão and associated with the idea that her activism against the Brazilian 1964-1985 dictatorship would be called terrorism (association also found on Twitter).

The consideration of video recommendations (the system indicating the next video to watch on YouTube) as a connecting element capable of composing circuits ("communities" of videos mutually recommended for people watching one of them) enables the composition and analysis of a network of YouTube videos. The connections established through recommendations also indicate the formation of circuits of videos with mutual recommendations, or communities of meaning. Besides enabling the identification of thematic communities, this grouping allowed us to build filters to deal with the large amount of noise in the corpus. The noise is associated with the fact that the searches were made based on journalists' names and not handles like the ones used to analyze Twitter, bringing a lot of non-related homonyms. Below we show the graph resulting from the recommendations among all the videos present in our corpus.

In an interview conducted by AzMina Magazine, we could listen to Miriam Leitão's statement about the attacks suffered by her. She told us that, beyond the offenses, the journalists need to fight the dissemination of fake news about their lives and careers, which is also a political strategy for disreputing those professionals. Miriam Leitão, for instance, is constantly offended with expressions as "bank robber", "terrorist", "snake woman", a term coined by the president's followers to minimize and mock the episode of torture suffered by the journalist during the Brazilian military dictatorship. She told us that she was on Twitter trending topics because "they used a picture of mine saying that it was [a picture] of my detention for having robbed a bank", Leitão commented in the interview, adding that she has never held a gun and that this information has been refuted dozens of times. "But, every now and then, there is a new wave bringing this back". She notes that fake profiles create artificial waves of attacks that pollute the debate and distort the dialogue.

Figure 12. Network graph connecting videos according to YouTube recommendations, highlighting the ones concentrating the network flow of recommendations (Page Rank)

In the image above, the areas with colors closer to black receive fewer recommendations, while the areas closer to green/yellow concentrate the flow of users following the recommendations. We can notice the concentration of recommendations in the lower right flank of the graph. By differentiating circuits made by patterns of mutual recommendations and considering the different communities formed (using network analysis algorithms to detect them), we represented clusters of videos using different colors in this second representation of the same graph.
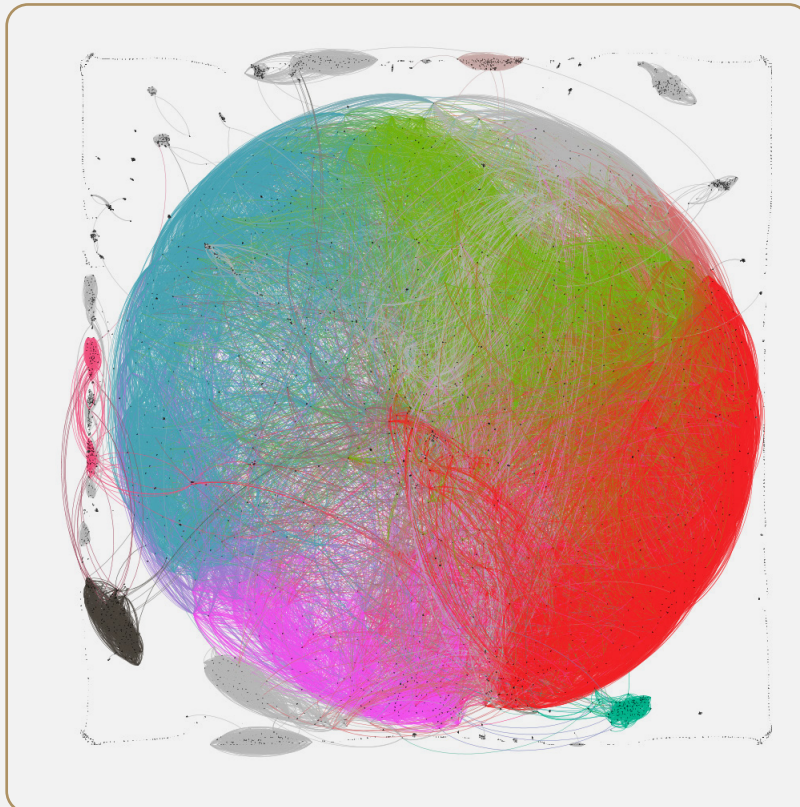
Figure 13. Network graph connecting videos according to YouTube recommendation, differentiating the identified clusters.

Comparing the two images of the graph, we can see that the cluster/community in red contains the group of videos to which people were recurrently referred (green/yellow on the first image of the graph), in an asymmetric flow that concentrates attention on this point of the network. By crossing the metrics of dislikes, likes, recommendations (degree) with the different communities found, we can confirm that videos involving Reinaldo Azevedo are both more likely to receive recommendations, and also to be targeted by dislike campaigns. This is explained by Lula's interview granted to the journalist on April 1st, leading to a series of far-right mobilizations for dislikes in this video and, also, to great popular attention. To make this pattern visible, in the image below only the names of the channels in which the videos exceed one thousand dislikes are shown. In the four communities of videos related to journalists (discarding groups of videos related to other topics collected due to similarities with the journalists' names), Radio Band News (which hosted the video) clearly stands out as the channel in which dislikes surpass this mark. The comparison below maintains the colors used in the previous graph (i.e., the community/cluster in red in the graph corresponds to Com1060 in red in the image below).
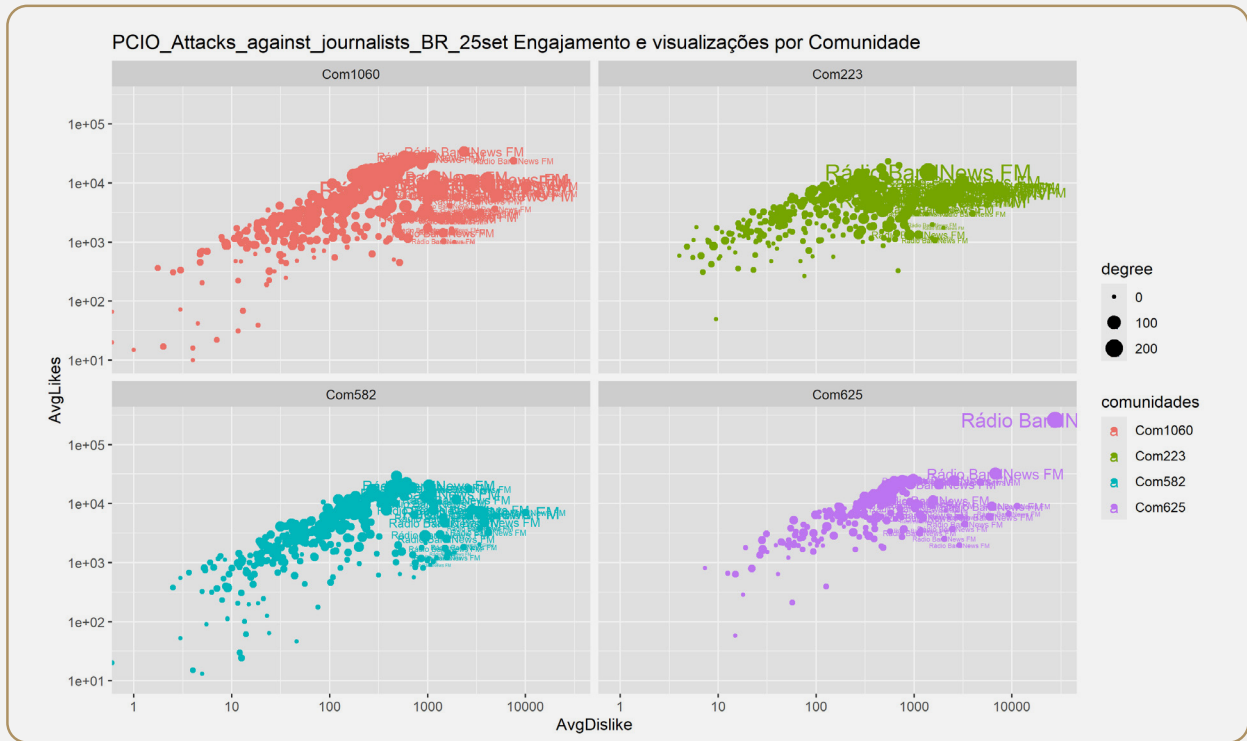
Figure 14. Correlation among likes, dislikes and recommendation (degree) in each YouTube cluster

Unlike the case of the comments, **the descriptions of the videos** are, in general, more related to the topic of the videos, without clear relations with attacks. Below we present the dendrogram considering the descriptions of the analyzed videos, after filtering to remove videos not related to the topic.
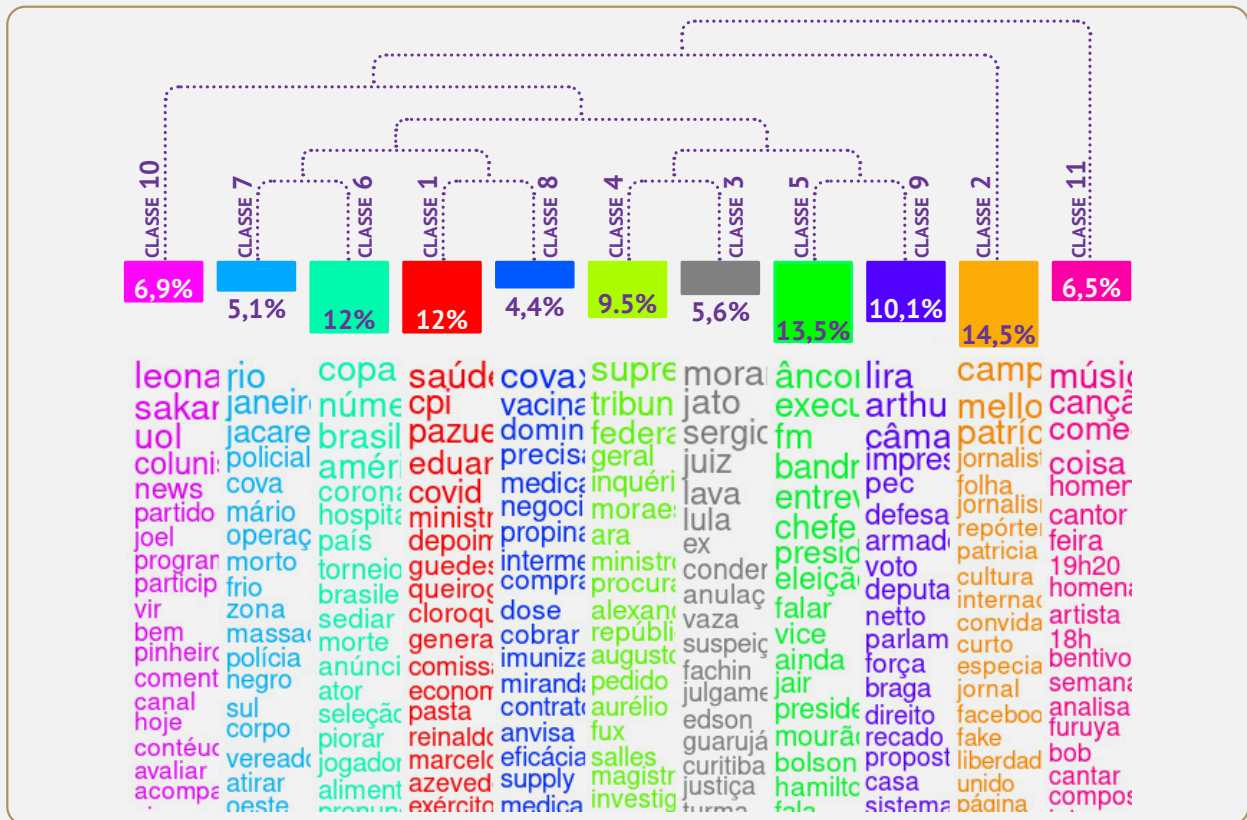

Figure 15. Genealogy (hierarchical clustering) of vocabularies found in our YouTube video descriptions.

We can see the relevance of Patrícia Campos Mello, Reinaldo Azevedo and Leonardo Sakamoto among the most present topics of videos. These are some of the most known journalists and political commentators in Brazil, and are known critics of Bolsonaro's strategies to intimidate journalists (whether or not they state their criticism to the public).

Aggressive videos specifically targeting journalists can be turned 'private' (therefore no longer accessible for users and journalists) by the channels that posted them (as a way of protection against further investigation) or deleted by YouTube for violating the platform's rules. By deleting or making a video private, both YouTube and channels can quickly suppress its metadata, no longer appearing in requests for data, and erasing important videos and actors involved in the attacks. We also lose information about the reach of these videos, their success in bringing engagement and the extent to which mechanisms such as recommendations and search results could benefit them. However, by collecting and analyzing daily results for searches with the names of the journalists in question, we built a database in which the daily evolution of these videos, their appearance in search results and position in a dynamic network of constantly changing recommendations patterns, can be accessed and verified.

Most cases of erased videos seem to involve clickbaits, i.e. sensationalist content that takes advantage of journalists' names to gain visibility. There are, however, videos endorsing attacks on journalists, including misogynistic attacks. Among the videos made private by the channel or deleted over the analyzed period, the five with the highest visibility before their deletion were:

CHANNEL	VIDEO	VIEWS	LIKES	DISLIKES	COMMENTS
Jovem casal	O QUE NINGUÉM SABE SOBRE A MAJU COUTINHO!	224354	19039	1768	904
Gustavo Gayer	INACREDITÁVEL! Glenn Greenwald Compra Briga da Direita e Denuncia Conluio Para Calar Conservadores!	140838	28233	241	1559
Informa Brasil	REINALDO AZEVEDO FAZ NOVA ENTRE-VISTA LULA AO VIVO E LULA FALA AO VIVO OQUE VAI ACONTECER COM BOZ0	17064	1826	308	0
Ricardo Gama	Globo passa vergonha e apaga vídeo e apoio a Patrícia Campos Mello / Wilson Witzel / Jair Bolsonaro	16343	1199	27	49
Hot Notícias	Chega Comunicado Urgente de Ex de Fátima Bernardes WILLIAM BONNER Feito Através de Revelação d Érica	12837	1073	69	45

The most frequent theme considering 22 videos related to the journalists identified among the ones excluded is the journalist Patrícia Campos Mello (mentioned in 13 of them).

The videos follow a specific pattern and many have limited visibility, which indicates that the journalist's name may be used as a strategic source of views if used as a clickbait by channels in search of audience. Videos like "Globo is ashamed and deletes video and support for Patricia Campos Mello / Wilson Witzel / Jair Bolsonaro", "IT IS OVER! Owner of Yacows Refute Patrícia Campos Mello !" and "Bolsonaro making fun of Patrícia Campos Mello about your big 'hole' kkkk" are examples of videos with bias similar to sexist attacks present in the comments of videos that go through dislike campaigns.

There are also videos with more neutral titles such as "Hans River, Patrícia Campos Mello and the President's comment"[23], "Patrícia Campos Mello and her political position" and "Patrícia Campos Mello and her political position part 2". The journalist's name is also used as a kind of clickbait on videos with no apparent relation to the topic, such as "JAIR BOLSONARO SUE: Germano Oliveira attacks Michele Bolsonaro's honour / Patrícia Campos Mello". There are also videos from better-known channels involving the journalist that are also among those deleted, such as "EDUARDO BOLSONARO SPEAKS ABOUT PATRÍCIA CAMPOS MELLO - Eduardo Bolsonaro - Flow Podcast" and "Manhattan Connection | Leandro Hassum, Marina Silva and Patrícia Campos Mello" that are present on the list because they were not retrieved as public at the moment of collection. Three of them seem to point out actions of the journalist in reaction to the attacks suffered, such as "Patrícia Campos Mello sues Bolsonaro for moral damages after misogynistic attacks", "On Women's Day, Patrícia Campos Mello exposes Bolsonaristas who attack her with sexual insinuations", or even point out that she is a target of these attacks, as in "Bolsonaro again incites virtual militia against Patrícia Campos Mello, from Folha".

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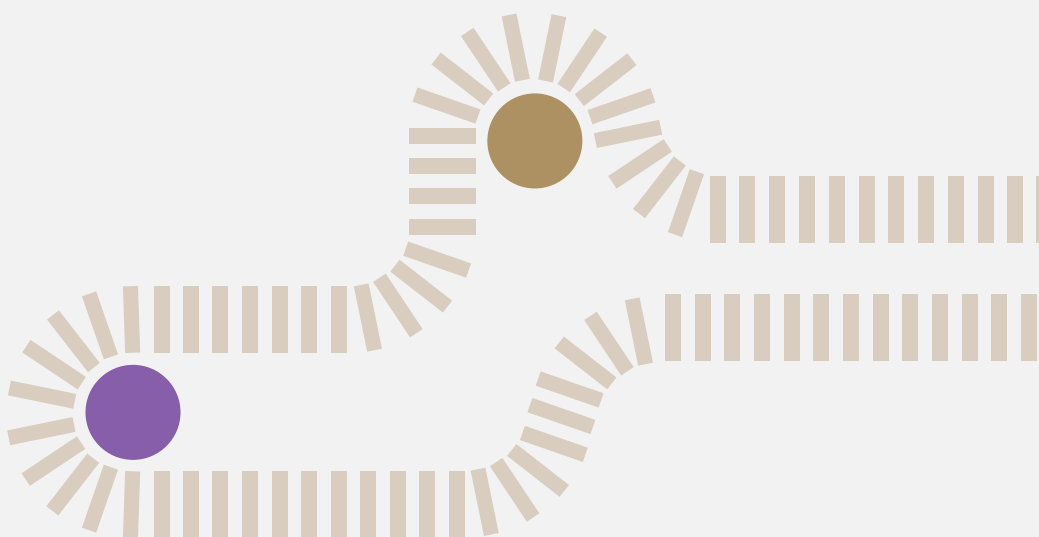
[23] Hans River is the man that originally insinuated that the female journalist would use sex to obtain information.

3.7_ Cross analysis YouTube and Twitter

We tried to understand connections between Twitter and YouTube through two different approaches: the first involves a combined lexical analysis, checking to which extent the different kinds of attacks and ways users express themselves on both platforms can be similar or diverse; the second involves direct online links between the two platforms, paying special attention to links used in messages registered as attacks in our database, using a regular expression made specifically for this project. Through clustering methods, we were able to separate vocabularies that appear only on one platform and those appearing on both YouTube comments and Twitter posts.

The vocabularies and main ways of attacking can be divided between (a) platform-specific (a group containing a single platform) and cross-platform ones (YouTube and Twitter appear with similar colors), and both vocabularies are related to (b) cross-platform dynamics.

The platform-specific ones show us that different platforms can acquire different functions inside a cross-platform campaign, without a single attack replicated in the same way on different platforms. Examples are clickbait videos made and deleted quickly, dislike campaigns involving YouTube, patterns related to hashtags when it comes to Twitter and other platform-related behavior. Meanwhile, we can see direct links (YouTube links being shared on Twitter) and YouTube comments quite similar to Twitter attacks (similarity found and grouped through textual analysis methods), showing that people to some extent use the same strategies. These two dimensions are related: by paying specific attention to YouTube videos with high dislike rates (platform-specific feature), we can easily find comments with attacks on journalists following vocabularies found on Twitter (a textual pattern that spread across platforms), not to mention direct online links. We went a step further checking if the YouTube search tool changes its pattern of results when Twitter brings peaks of tweets identified as attacks, but it did not happen.

The classes and colors of vocabularies in the cross-platform lexical analysis are organized as follows:
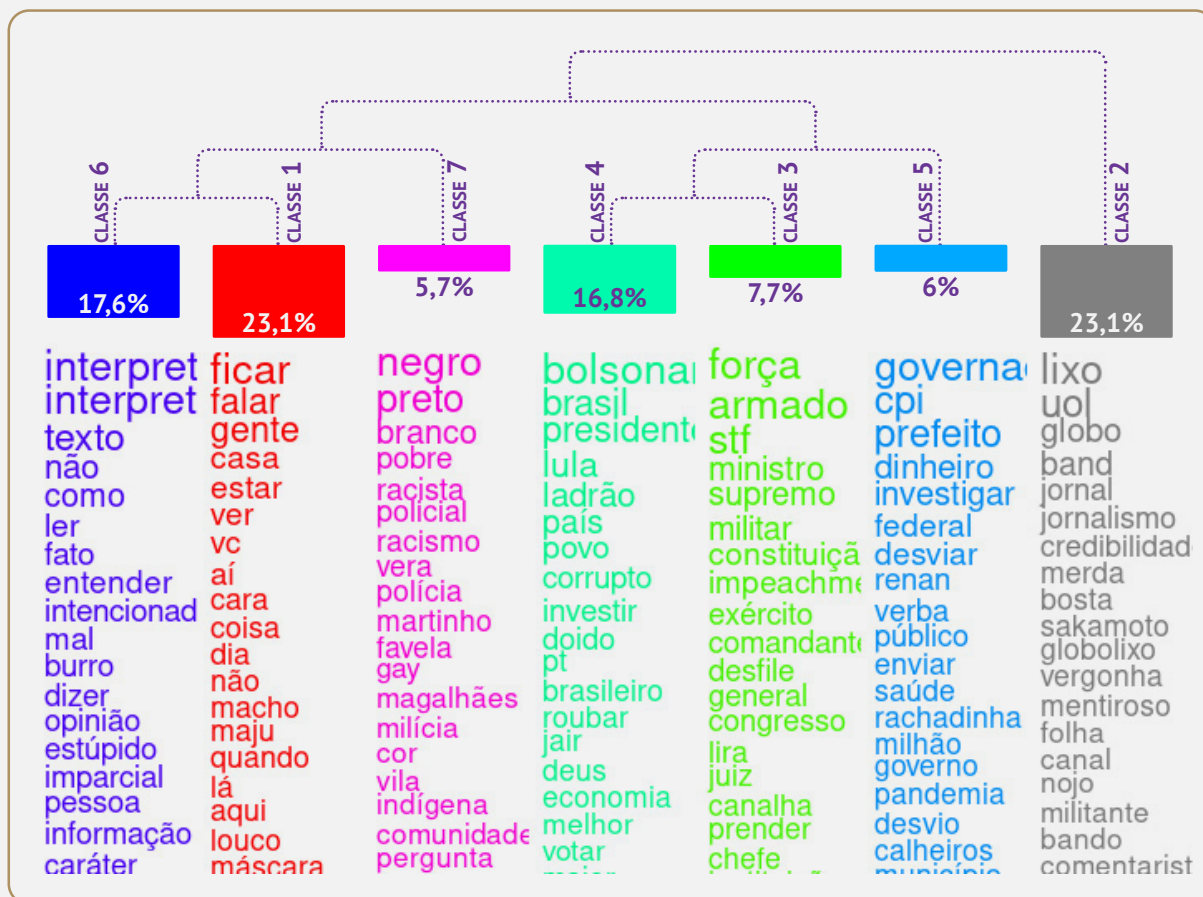
Figure 16. Genealogy (hierarchical clustering) of vocabularies found crossing Tweets and YouTube comments

Above, using the same colors to differentiate the vocabularies, we have the tags related to both Twitter and YouTube. We can see that racism-related terms and other terms related to lack of interpretative capacity, similar to the ones described in our previous topics, appear and seem to be closer to Twitter (see Figure 17) as a platform specific feature (Twitter being marked by classes 6, 1 and 7). On the other hand, YouTube is marked by classes 2, 3, 4 and 5, attacks being related to credibility, corruption, and bias.

It is interesting that this dendrogram enabled us to see some of the attacked journalists' names co-occurring enough times to mark an entire vocabulary. It means that these names are closer to specific vocabulary (not appearing homogeneously in diverse comments and tweets), therefore being an element of distinction when comparing all the vocabularies. Names appearing in all classes are less likely to be shown in this image, once the focus is on specific words of each topic. We can see Vera Magalhães (close to the debate around minorities, in part because of reactions to an interview she made with Martinho da Vila, a traditional black singer and composer), Maju Coutinho (a well-known black women journalist, mostly attacking her professional competency) and Leonardo Sakamoto (men from an Asian background, attacked as part of biased left-leaning journalism). As we will see when it comes to the links between platforms, Sakamoto and Magalhães also appear on links connecting the analyzed tweets and YouTube videos.

Locating the YouTube videos in which we found diverse vocabularies related to attacks (labeled combining the word 'YouTube' and the videos' id) in the same panel of tweets identified as attacks (labeled combining 'Twitter' and the journalist mentioned), we can see interesting patterns, shown in the image below.
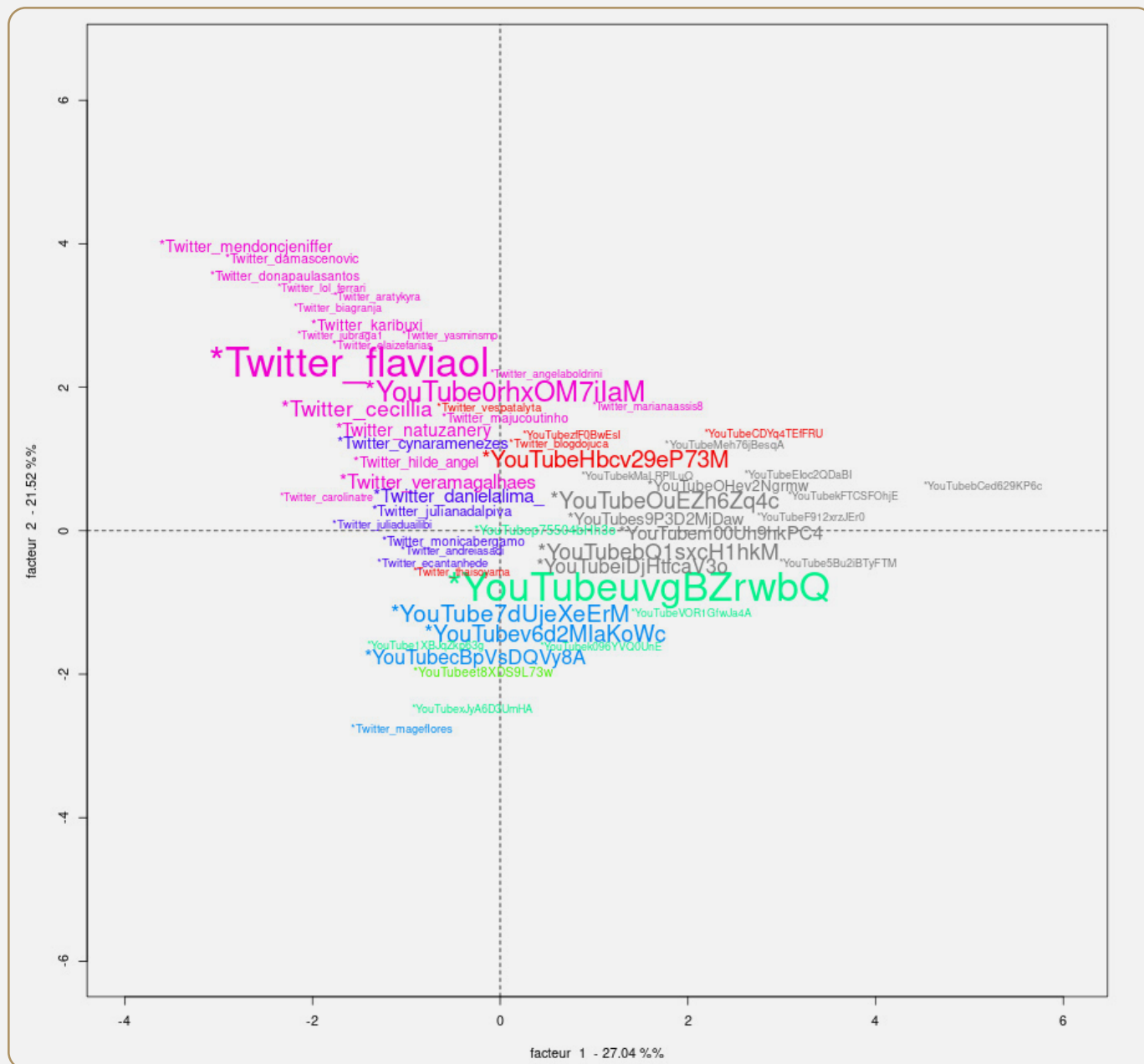

Figura 17. Distances and proximity (factorial correspondence analysis) among the target to which the texts' targets, crossing Twitter mentions and YouTube videos (video Ids)

The frontiers between classes/colors are marked by interchangeable lexicon appearing close to the words composing different vocabularies. It also shows approximation between Twitter and YouTube topics if we compare the image below (which locate words that were colored according to the vocabulary they are closest to) and the image above (Twitter and YouTube tags colored in the same way).
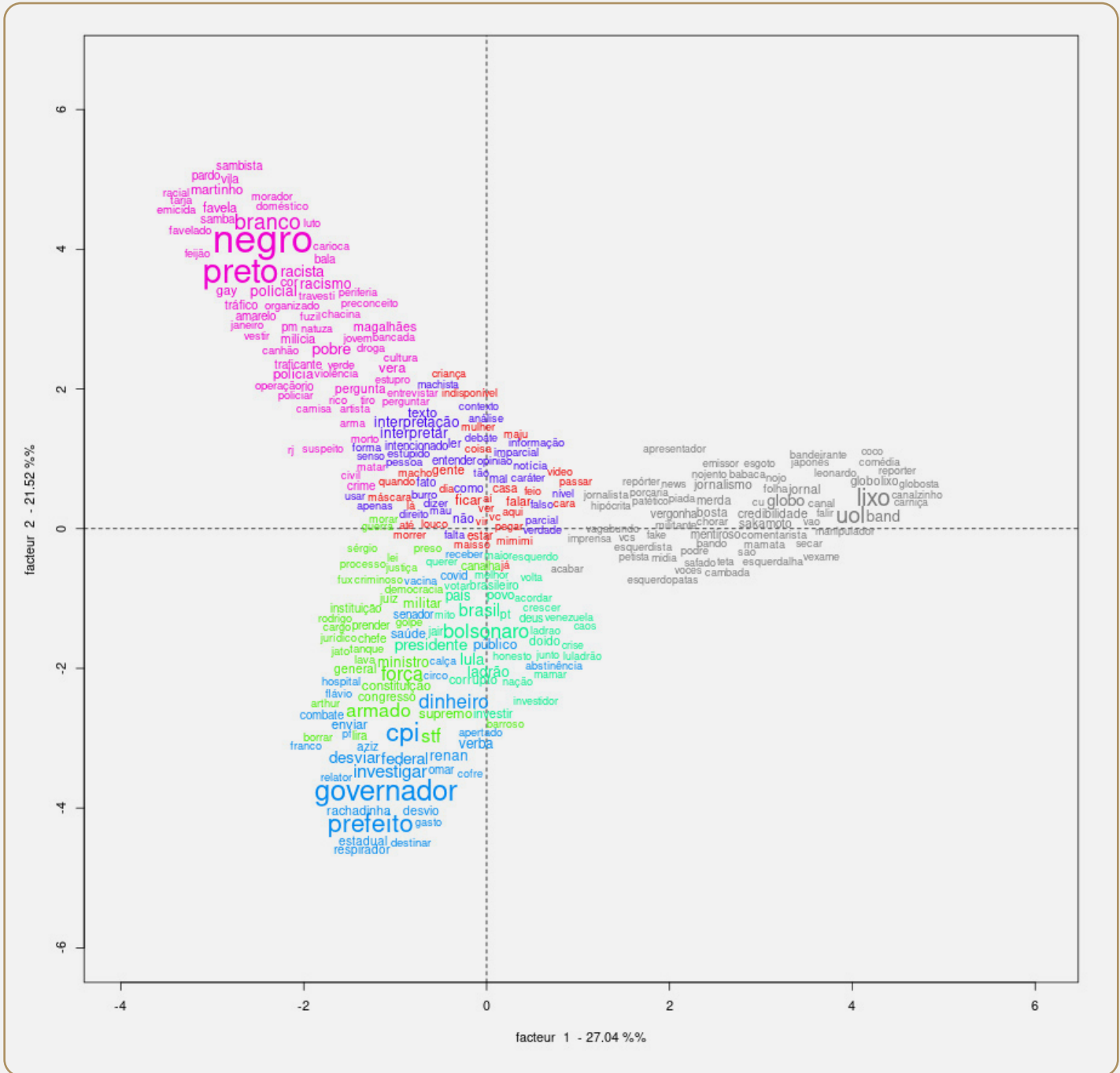
Figure 18. Distances and proximity among the words according to co-occurrence (factorial correspondence analysis) crossing Tweets mentions and YouTube comments.

Our findings range from criticism involving lack of interpretative ("interpretar/interpret", "interpretação/interpretation", "contexto/context") capacity, to terms involving historically marginalized social groups ("negro/black", "preto/nigger", "branco/white", "racista/racist", "pobre/poor"), or from partiality and truth ("parcial/biased", "verdade/truth") to attacks against media outlets as "garbage/lixo". Therefore, many tweets involving attacks present patterns that are quite similar to YouTube comments, despite the differences between the platforms, which was confirmed through our lexical clustering methods.

When it comes to links, we found 345 YouTube links among tweets identified as attacks, but considering our YouTube sample, all tweets mentioning videos on our database were directed to 6 different videos.

These videos are mainly related to Bolsonaro's agenda, both directly (events related to government) or indirectly (agenda like public security crisis and criticism to the way the police tried to catch the serial killer Lázaro), ranging from the tanks parade to show Bolsonaro's strength on September 7th (which came close to an institutional crisis), to comments on national budget text send to the Congress by the government. The titles of the videos are:

Reinaldo Azevedo: Veja por que Operação Caça-Lázaro é desastrada.
O É da Coisa, com Reinaldo Azevedo - 28/05/2021
Viva Voz (15/07/21) - Vera Magalhães
Desfile de tanques é vexame de presidente fraco, frustrado e frouxo | Leonardo Sakamoto
Glenn Greenwald DEBATES Nathan J. Robinson: Is Glenn a Useful Idiot for the Right?
Viva Voz (31/08/21) - Vera Magalhães analisa o texto do Orçamento enviado pelo governo ao Congresso

All journalists in these videos (Reinaldo Azevedo, Vera Magalhães, Leonardo Sakamoto and Glenn Greenwald) are present in the analyzed attacks on YouTube and Twitter (Vera Magalhães as the 3rd most attacked on Twitter and Reinaldo Azevedo as the 8th). The small amount of direct links to these videos combined with the use of links to videos in the attacks points out the need of understanding how these videos that are spread on Twitter are targeting journalists while not mentioning them on their titles, subtitles and tags. We found clear gender bias on our textual analysis, besides race bias: there are differences between white men and women journalists, but the gap is even bigger if we compare them with men and women non-white journalists. The lack of race in the shared links also points out the need to think of alternative strategies.

Only one video with links on Twitter appears among the ones having high dislike rates (therefore present in our dataset of video comments). It was the video in which Leonardo Sakamoto talks about the 'embarrassment' caused by the tank parade on September 7th - initially aiming to show Bolsonaro's strength, but that was later ridiculed by the opposition ("Desfile de tanques é vexame de presidente fraco, frustrado e frouxo | Leonardo Sakamoto", which can be translated as "Tanks parade is an embarrassment from a weak, frustrated and coward President").

Twitter appears as the main source of attacks, both on our data collection and on interviews with journalists. Varying quickly, it not only brings a way to answer news by attacking the reporter publishing it, but also a way to attack journalists as a means of deflecting public attention (something noticed by journalists themselves) in key moments of discussion. YouTube brings the other side of this strategy, as far-right channels establish themselves as news sources accusing traditional media outlets of fake news, using the names of attacked journalists as clickbaits and confirming the cultural environment in which it makes sense to consider journalists from

traditional outlets as enemies. WhatsApp is used for coordination and internal discussion, and journalists are many times referred to as "journazi" (referring to nazism), which also happens on YouTube. Though all these platforms and applications can be used on attacks, they present an overall joint behavior without recurrent explicit links. It makes textual clustering applied to cross-platforms extremely important to understand this scenario. Despite the fact that we can find peaks and differences concerning intensity, attacking journalists appear as part of an ongoing political culture, and not as a specific action well delimited on time.

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3.8_ WhatsApp Data Collection and Analysis Methodology

Alongside collecting data from Twitter and YouTube, we have also monitored a sample of segmented hyper-partisan groups on WhatsApp to understand how attacks against journalists appeared in the messaging app. The mobile application was pointed out as a key vector for far-right influence operations in the 2018 presidential election, and many of the messages shared on the platform directed users to other places on the internet - particularly YouTube. The data were analyzed using a multi-method approach, combining simple frequency statistical analysis, qualitative content analysis, as well as ethnographic and interpretative observations of the messages in the sample.

Monitoring 52 randomly selected groups aligned with Bolsonaro and having national scope, from November 2020 to September 2021, we reached a total of 964,455 messages exchanged in the period. In parallel, we also created a rule to include not only the nominal mentions, but also the references to the names of news outlets and broadcasters, as well as their pejorative nicknames (e.g., Globo, CNN, Globolixo, CNNLixo etc.).

Based on the list of journalists monitored on Twitter, all messages were filtered in search of mentions to the analyzed journalists. We identified that the names varied, being adapted by diverse groups, and the most important variations were added (for example, William Bonner, Wilian Bonner and William Boni, refer to the same journalist). Considering some common names and simpler compositions (Flávia Oliveira, Daniela Lima), it is possible that the data may contain noise. However, we consider that the rule worked relatively well to filter the mentions.

This methodology has some limitations we would like to point out: the data were filtered from the full database based on nominal mentions to journalists, and therefore messages that do not have the journalists' names were excluded from the total. There is a large set of attacks on journalists that do not directly mention their names, nor call them by vulgar nicknames ("Leitoa/Sow[24]", instead of "Miriam Leitão"). Some nicknames are simpler to trace ("Verdevaldo", for Greenwald) than others, as these involve more generic or unrelated words that would attract a lot of noise junk to the corpus.

The corpus of nominal mentions to journalists resulted in 2,359 messages, while the corpus of more generic mentions to media outlets brought more than 400 thousand messages, from which we can already draw an important conclusion: on WhatsApp, the amount of mentions to the press is much more frequent than the amount of nominal mentions to journalists. It is true that not all of these mentions represent attacks, but, if we assume that the trend does not change for offensive content, we would find that attacks are often directed against the entire media or outlets as a whole.

Considering the corpus of 2,359 messages that mention journalist's names, there are repeated messages (i.e. the same messages appearing more than once), either sent by the same user or by different users. By isolating the single messages, we have a corpus of 1,071 messages. We then performed some frequency analysis on these two corpora (2,359 messages and 1,071 unique messages), to check who were the most mentioned professionals and where these mentions came from.

To measure gender biases on the attacks, we created a composite and representative sample, dividing the corpus of 1,071 unique messages by gender. This resulted in a third corpus of 470 messages, which were coded (one by one) to assess whether or not these messages were attacks. When coding, we only considered explicit attacks. This means that messages like "Fátima Bernardes has cancer!" or "Bonner was summoned to testify in court" were not considered attacks, even if they are inserted in a context of evident animosity. Only messages presenting explicit elements of incitement to violence, slander or similar were labeled as attacks. Accusations that "journalist 'X' propagates fake news!" or curses and rude comments such as "Miriam Leitão ate manure[25]" were included in the category of attacks.

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[24] Pun made between "Leitão", the journalist's surname, and "leitoa", in English "sow"
[25] In Brazil, a popular expression implying that is the reason for a person to say something bad.

3.9_ WhatsApp Data Analysis

The first result that we highlight is the number of mentions per gender. Considering the corpus of 2,359 messages, we have 1,289 mentions to men journalists and 1,070 mentions to women journalists. But, when we go to the corpus of single messages (N = 1,071), we have an inverse distribution: 588 mentions to women against 546 mentions to men.

This means that mentions of women journalists usually occur in WhatsApp groups in a more specific and direct way, and not so often in viral messages (the ones repeating themselves frequently), as is the case with men journalists. A qualitative look confirms that the mentions (and also the attacks) on women occur in the form of comments and expressions of opinion, while most of the attacks on men refer to messages that are widely shared, and are often accompanied by more general mentions to the press (e.i., these messages use the name "Bonner", a reference to William Bonner, a Globo news presenter, to talk about Globo more generally).

The fact that attacks on women are "less" viral does not mean that they are less important. On the contrary, what seems to occur is that there is an important equivalence between men journalists and the press outlets themselves, which makes the attacks nonspecific ("I don't trust Bonner or Globo"), while the attacks on women are directed at the nature of the subjects ("Maju [Coutinho, also a Globo presenter] is an idiot"), and, therefore, even more violent.

Regarding the temporal frequency of the messages, the sample suggests that the day with the highest incidence of nominal mentions to journalists was April 1, 2021. On April 1, a Federal Police operation fined William Bonner and 20 other Globo employees for allegedly evading taxes (the journalists involved and Globo claim that they are being persecuted)[26]. Two other months, May and September, also present a high incidence of mentions. On May 14 and 17, the same messages against journalists circulated. The messages accused different outlets, with emphasis on O Estado de São Paulo newspaper, of being biased, and ended with a list of "unreliable" and "leftist" names, including several journalists. On 14 May, Bolsonaro attacked O Estado de São Paulo in a live stream on YouTube. On May 17, it is possible to identify an apparent coordinated campaign in which the same viral message is forwarded dozens of times (N = 42) to different groups. Although we don't know what triggered the campaign on this day, we identified that Bolsonaro had a tough interaction with a journalist on the same day, when he replied on Twitter to a message from a journalist from IstoÉ magazine, who said that he (the president) was gay. In September, the attacks were related to the animosity concerning discourses against Supreme Court members, the voting system and other democratic institutions.

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[26] https://www.uol.com.br/splash/noticias/ooops/2021/04/01/exclusivo-bonner-e-mais-20-da-globo-sao-autuados-pela-receita-federal.htm

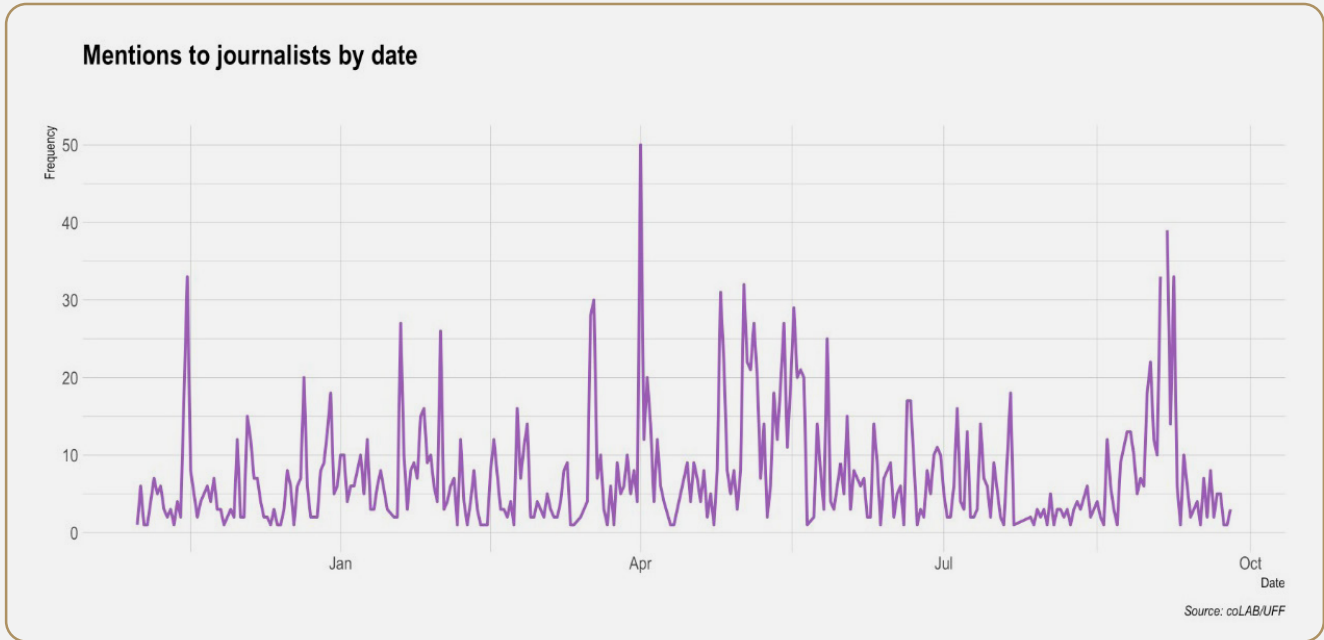**Mentions to journalists by date**

Source: coLAB/UFF

Figure 19. Mentions to journalists on Bolsonaro supporters' WhatsApp groups monitored over time

In short, even if they are not presented as a direct and clear consequence of the events, the viral messages that circulate on WhatsApp attacking the press grow whenever there is an episode that makes these attacks convenient. In some cases, such as that of April 1st, there is a direct relationship between the news content published in the groups and political events (Federal Police operation); in other cases, however, the president's speech apparently serves as a dog-whistle for coordinated campaigns to be triggered (mention to O Estado de São Paulo in live, messages attacking the newspaper in the groups, for example).

This relationship is also clear in the segmented data, when we observe the individual mentions to journalists. In this case, it is possible to notice that some journalists, such as Miriam Leitão and Maju Coutinho, become preferential targets of viral messages when they displease the government. Miriam Leitão harshly criticized the management of the pandemic by Bolsonaro's government on December 6th, saying Bolsonaro was a "life risk" for the Brazilian population. In the same period, more messages mentioning Leitão - but not her comment about Bolsonaro - appeared on WhatsApp groups. Something similar occurred with Maju Coutinho, in March 2021, when she supported the implementation of a lockdown and used a colloquial expression to respond to those that were against the measure, saying that "o choro é livre" ("crying is free", an expression meaning that you don't mind displeasing people by an attitude, decision, or the like). From that moment on, we noticed an intense campaign to discredit the journalist on WhatsApp.

Regarding the main targets of nominal mentions in Bolsonarist groups on WhatsApp, we have, in the following order, Miriam Leitão (399 mentions), William Bonner (341), Maju Coutinho (152), Reinaldo Azevedo (130) and Luís Nassif (118). Below, we present the number of mentions to each journalist.
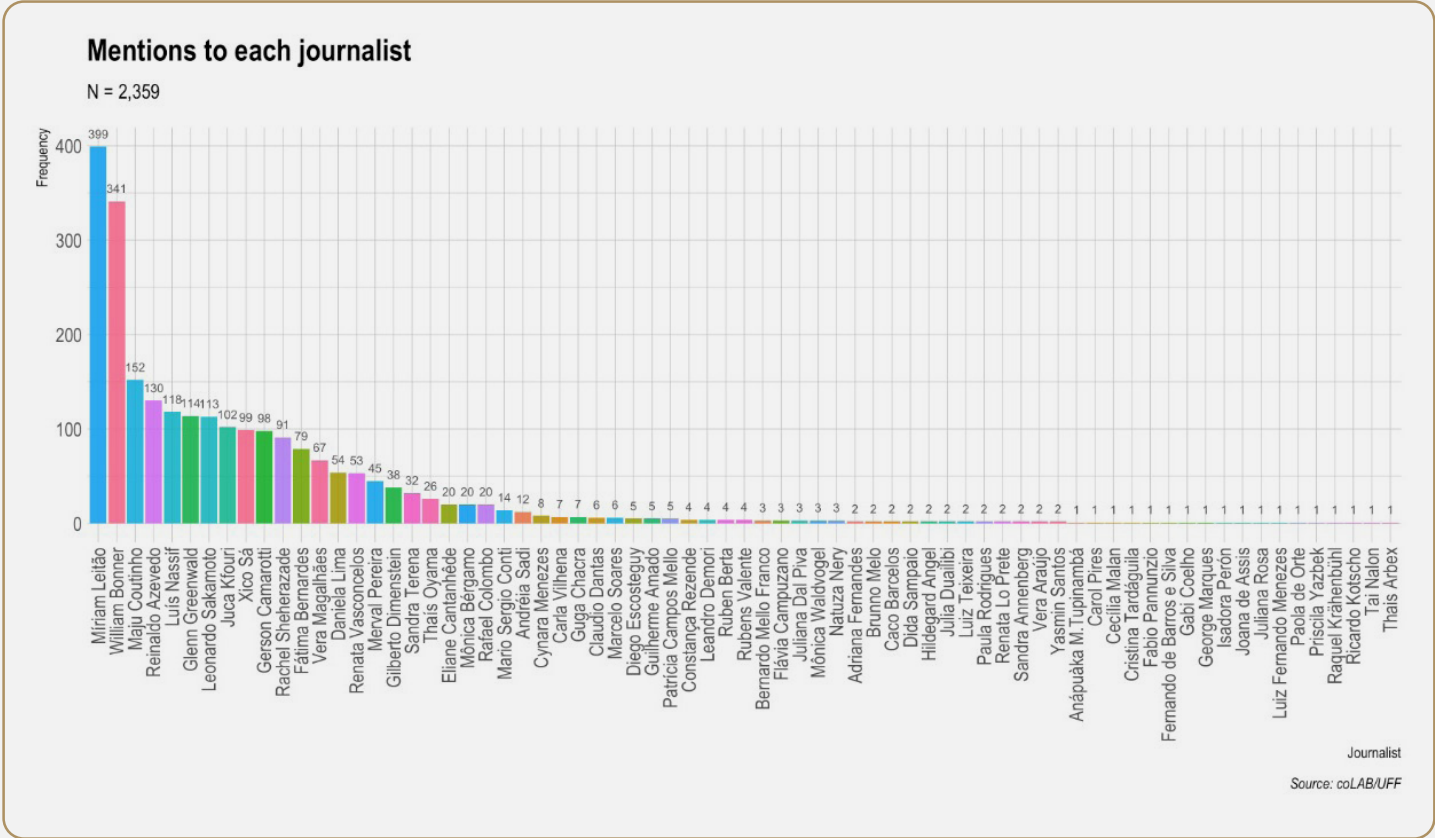
Mentions to each journalist

N = 2,359

Figure 20. Number of mentions to journalists on Bolsonaro supporters' WhatsApp monitored groups

We also identified a cross-incidence of messages that simultaneously mentioned more than one journalist: it is possible to observe that some messages that mentioned Bonner also mention Miriam Leitão, and other messages that mentioned Miriam Leitão also mentioned Merval Pereira, and there are lists that circulate with the names of several journalists at the same time (Xico Sá, Reinaldo Azevedo, Luís Nassif, Leonardo Sakamoto, Juca Kfouri, for example).

4_ Discussion and Conclusion
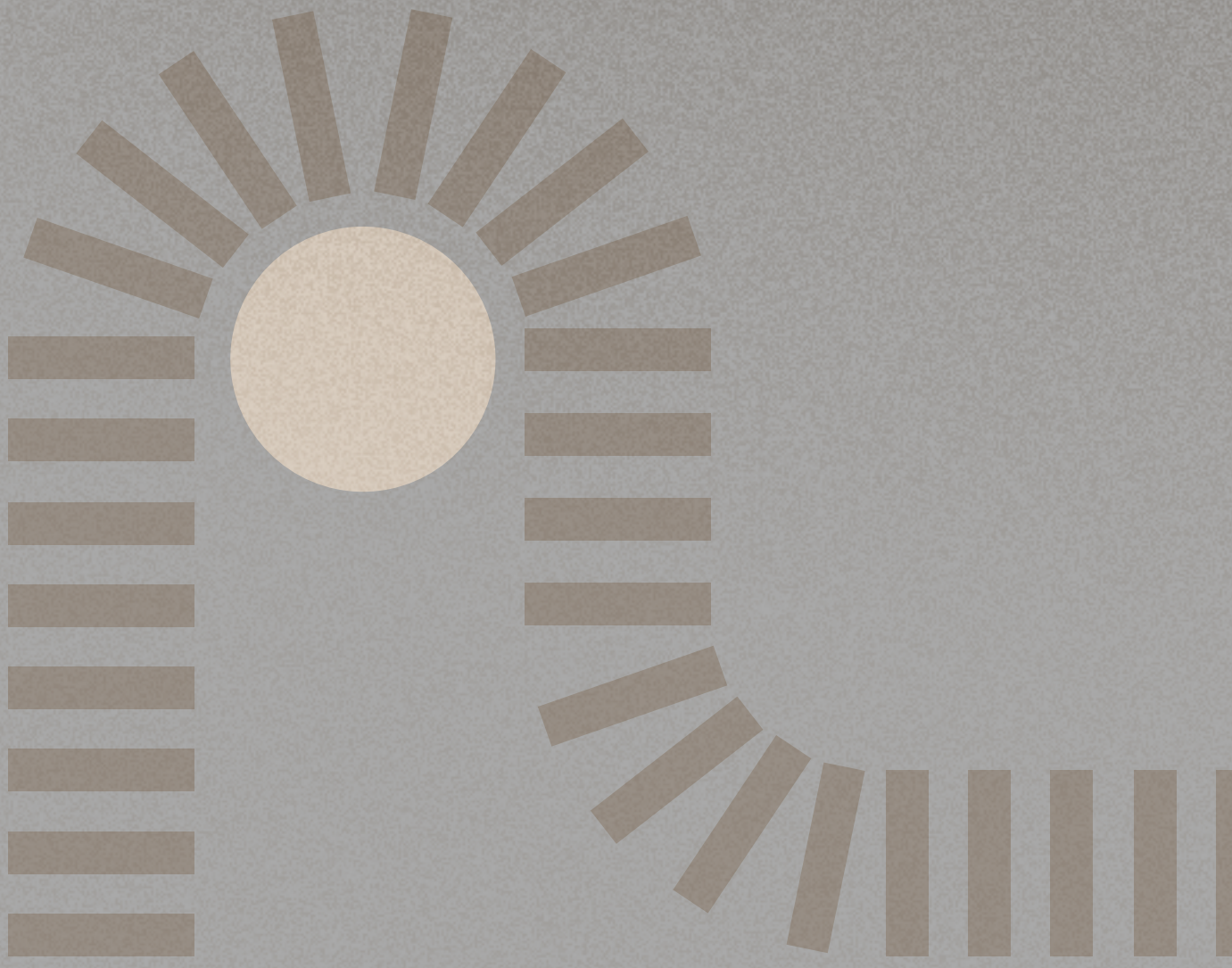
Our research has pointed towards a number of layers contributing to the effectiveness of influence operations directed at individual journalists and professional media outlets, as well as at hampering the circulation of information that is undesired by the political establishment.

Many of the concerns voiced by the interviewees were associated with President Jair Bolsonaro and involved events stemming from the Parliamentary Inquiry Committee on the government's handling of the pandemics, or his candidacy in 2022. The president's supporters instigated hostility towards media outlets using hashtags associated with these two agendas, which appeared both in our qualitative and quantitative analyses. It is hard to define the number of attacks in that period relying on the identification of words and names because people criticizing the government would engage in these discussions using depreciative terms towards the president's supporters.

Form

Certain trends were expected and have been confirmed, namely, that these attacks are particularly directed at discrediting the work of professional journalists. They usually come in the form of intense smear campaigns, which seek to intimidate and humiliate media professionals, many times in an attempt to dissuade the publishing of negative news about the government and the voicing of political criticism in the online public debate.

Another outcome that was expected was that these attacks were highly gendered and more directed at minority groups, with content varying from simple racial slurs to personalized misogynistic threats. More specifically, the themes of the attacks varied according to the gender of the victim. Either on Tweets or YouTube comments, offenses directed at women brought many sexual terms and more often questioned their ability to exercise their profession. White men, on the other hand, received more offenses directed at their profession and less at themselves as a person (considering the Tweets analyzed qualitatively). Women were also more targeted on YouTube deleted videos focused on journalists' personal lives and on WhatsApp personalized attacks. Overall, we noticed that Twitter users interacted more with the content posted by men, arguing and, in some situations, defending them from other users. This supports the perception that the attacks against women were more personal.

One of the interesting results from our qualitative approach was identifying that threats often happened in public environments, such as through fully public Twitter posts, which contrasted with our expectation that these would be restricted to private communication spaces, such as emails and personal messages. Overall, Twitter seemed to be the preferred arena for the attacks against journalists, which we suppose is associated with the symbiosis of the professional and media outlets on Twitter discussion space. This can be related to the fact that, unlike YouTube

news channels or WhatsApp messages, people can tag journalists' personal profiles on Twitter. As shown in the interviews, many of the journalists mentioned they used Instagram and Facebook as more restricted personal spaces. This suggests that the content diffused through the services' architecture, including posting features and dissemination algorithms, is also relevant in determining whether the platform will be used to start an attack.

Effects

Interviews suggested that these campaigns are having direct and indirect effects on the individual journalists and also on their ability to conduct their work, suggesting a chilling effect for professional journalism and for freedom of expression as a whole.

One important layer that appeared several times is the insecurity and lack of protection associated with these attacks. Many journalists revealed that they think twice before publishing articles, considering their personal, emotional and physical safety, but also of their loved ones. This insecurity is largely associated with the lack of institutional protection and responses to these attacks. The interviewed journalists rarely have had any kind of training or orientation to handle these situations. Additionally, there seems to be little support from specialized organizations, and almost all interviewees showed no expectation that the authorities would respond (or were capable of doing so). This vulnerability of the professionals seems to be an important catalyzer of the effects of these influence operations.

Cross-platform strategies

One of our main findings from the data collection and analysis was that the very same textual patterns characterizing Tweets that are hostile to journalists can be found on YouTube comments in videos with high dislike rates. There were also platform-specific patterns (dislike campaigns on YouTube and intensive use of hashtags on Twitter, for example) co-existing with the cross-platform convergences. It confirmed our idea that different platforms acquire different functions in a cross-platform campaign, beyond the simple replication of hostile messages on different platforms.

While all of these mainstream platforms are used in attacks, the textual clustering applied across the platforms has been highly important to understand this scenario. Despite slight variations in intensity and peaks, we were able to conclude that attacking journalists is a part of an ongoing political culture and a strategy of political communication and mobilization – and, therefore, the attacks do not constitute isolated events.

From these analyses, we came to a few interesting conclusions. All of our data collection points out to Twitter being the main source of the attacks. It has high volatility in its trends and enables news (and the reporting journalist) to quickly rise to the spotlight, but also makes it easy for attackers to produce responses. These counterattacks often target at launching a large campaign to discredit the source and at hogging the public's attention.

YouTube, on the other hand, hosted a major campaign against a journalist interviewing the former President Luiz Inácio Lula da Silva, involving both constant hostile comments and dislike campaigns. Considering waves of interest around journalists being attacked on Twitter, the platform also offered an important complementary role. As the attacked journalist's name trends on other platforms, the increased interest draws people to search and access these videos, and sometimes the victim of the attacks is used as a clickbait for bogus news channels to attack the traditional media outlets.

Finally, WhatsApp is mostly a tactical space for coordination and networked discussion. These environments have developed their own terminologies and codes to refer to journalists, which goes to show how systemic the hostility is towards the media. Journalists are many times referred to as "journazi" (referring to nazism), which resonates with the content appearing on YouTube.

Conclusion and further action

We have found that different tactics are used according to the culture and design features of each platform. Though not occurring in a single chain of events, we have also managed to dissect these cross-platforms events to better understand how these platforms are used, making it clear that attacks are not triggered concurrently, but there is interplay among the different environments.

Some important points to address in future work are a better understanding of the ecosystem that catalyzes these attacks, the shared meanings around it, and if the hashtags being pushed and hostile comments come from centralized sources.

Also, it would be interesting to discuss cross-platform mechanisms of inhibiting these attacks, in strategies where platforms would not only look at their own governance, but also at their governance in response to these cross-platform events.

Finally, it is important for institutional actors to think of better ways of protecting journalists against influence operations. The overall lack of responses from authorities and organizations leaves journalists vulnerable, and serves as a fundamental catalyzer for these influence operations. Better security mechanisms and ways to report attacks to platforms could render these attacks less effective.