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WhatsApp audios and the remediation of radio: Disinformation in Brazilian 2018 presidential election

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ABSTRACT

This article brings the results of an investigation into the role of WhatsApp audio messages in the 2018 Brazilian presidential elections, proposing that instant voice messaging borrows elements from radio language. We started from a broader research, conducted by the Brazilian National Institute of Science and Technology in Digital Democracy (INCT.DD, in its Portuguese acronym), which identified a network composed of 220 WhatsApp groups – all of them with open-entry links – supporting six different candidates. Those groups put together thousands of anonymized profiles linked through connections to similar groups, configuring an extensive network. More than 1 million messages, including 98,000 audios, were gathered and downloaded during 2018 Brazilian electoral period (from June to October). We focused on eighteen audios with major circulation (totalling 3622 appearances) among the ones shared at least 100 times, which were extracted and analysed. The use of radio content analysis techniques pointed out strong evidence that audio messaging remediate radiophonic elements such as intimacy and colloquial language to accelerate disinformation campaigns.

A GAP IN RADIO STUDIES

Recorded audio messages, or audios, shared through WhatsApp instant messaging played an important role in the 2018 Brazilian elections, forging a brand new environment to voters with limited media literacy and difficulties to fact-check misinformation. From voices of politicians, businesspersons, celebrities as well as anonymous people, to conversations supposedly leaked to broader networks and a considerable amount of disinformation with clearly electoral goals, these audio messages brought new elements to online campaigning using tactics drawn from other mediums.

Despite tentative regulations, the Brazilian presidential campaign became a laboratory for the disinformation dissemination campaigns (Santos 2019; Resende et al. 2019a, 2019b; Chagas et al. 2019a). Jair Bolsonaro, a former military and congressional representative defined by *The Guardian* as a ‘far-right, pro-gun, pro-torture populist’ (Phillips and Phillips 2018), has built his campaign around pledges to crush corruption, crime and an alleged communist threat. Mainstream media’s reports point to illegal campaign private financing, which would have boosted fake news against his main opponent (Mello 2018a). The case has been investigated since September 2019, by a Parliamentary Inquiry Commission, composed of representatives from the Chamber of Deputies and the Federal Senate, tracking usage of fake profiles in social media political attacks (BBC 2020).

Brazilian elections’ regulations include Free Electoral Broadcast Airtime (HGPE) on TV, in which parties and candidates have advertising programmes of about five to fifteen minutes on all broadcast channels to present themselves to the electorate, in a compulsory voting system. Since the 1970s, political forces struggled with each other in order to achieve the larger ad time in television. However, in 2018, things changed.

Bolsonaro had less than two minutes of HGPE on TV and unobtrusive support on the part of Brazilian media. Nevertheless, he won a deeply divisive election. With a social media- and instant messaging-based campaign, he secured 55 per cent of the valid votes against 45 per cent of Workers Party’s

(PT) candidate Fernando Haddad, former São Paulo's mayor and minister of education in Luiz Inácio Lula da Silva office. Electoral abstention reached 20.3 per cent of population able to vote, the highest rate in twenty years. On 18 October, ten days before second-round polls, *Folha de S.Paulo* – one of the three biggest quality papers in Brazil – reported that supporters of Bolsonaro paid for mass WhatsApp messaging by third-party agencies. Each was reported to pay up to 12 million reais (approximately 3 million euros in exchange rates at that time) to spread tens of thousands of attack ads against Workers Party. After thirteen years in office, PT was the main target: namely, Lula and his successor, Dilma Rousseff, who had suffered a controversial impeachment process in 2016.

On 5 October, a BBC journalist reported strong fake news activity on 272 WhatsApp groups. During a week, the reporter documented a huge amount of disinformation, conspiracy theories, attacks to traditional media, LGBT, feminists and human rights activists, and allegedly ordinary people audios and videos supporting candidates or defaming their rivals (Magenta et al. 2018). In some groups, there had been more than 2000 posts in a single day during the electoral period.

There is an increasing number of political communication studies focused on social media influence on recent polls – specifically about elections in United States (Bossetta 2018; Allcott and Gentzkow 2017), Malaysia (Nizah and Bakar 2019) and Ecuador (Zumárraga Espinosa et al. 2017). Audio messaging, however, remains neglected as an object of more specific studies, which could involve radio and sound media researchers.

Audio information is increasingly important in the digital content environment, demanding new qualitative, relational and quantitative methodologies. Few media researchers have been using automation to analyse audio, although sound emerges as a strategic asset in the context of big data. Voice recognition for home and surveillance systems, speech recognition, sentiment analysis and music information retrieval constitute some of these frontiers in recent technological developments, which can be investigated through a wide range of audio analysis procedures, using open-source Python libraries such as pyAudioAnalysis (Giannakopoulos 2015).

From the use of jingles in political advertising during elections (Lourenço 2009) to the co-optation of music and radio language by authoritarian government propaganda (Tomás 2013) and music activism (Van Zoonen 2005), much has been said about the relationship between sound and politics. Recent efforts have called attention to the importance of the sound communication in packaging politics. Street (2000) and Scheuer (1999), for instance, discuss what the latter calls the 'sound bite society', the scenario in which politicians shape their messages according to the prevalence of audio-visual media, resulting in a populist appropriation that emphasizes short and sharp quotes, most of the time decontextualized as memes (Rushkoff 1994).

In this matter, WhatsApp poses challenges to researchers because of its opaqueness. Its ciphered private architecture raises a series of issues. How could an application be used to spread encrypted disinformation¹ so quickly and recurrently on national scale with no visibility algorithm or paid micro-targeting tools, no cumulative social information aggregated to messages forwarded, limited message forwarding and caps on the maximum number of people in each group?

Recent investigations on WhatsApp's electoral influence in Brazil tend to discuss specific viral mechanisms and fake news circulation cycles, including

1. We prefer the term disinformation, which involves intention, rather than misinformation, which does not. See '2019 Brand Disinformation Impact Study', <https://cdn2.hubspot.net/hubfs/4326998/2019BrandDisinformationReport.pdf>. Accessed 24 October 2019.

2. Although it is a concept formulated in its origin to deal with visual communication, *remediation* offers a gateway to radio analysis from a double logic: immediacy and hypermediation, establishing a tension between transparency and opacity in media repositioning.
3. We are not here proposing a mechanistic relationship between the spread of fake news and electoral results. Furthermore, the political scenario in Brazil in 2018, was much more complex, involving one far-right candidate (Bolsonaro), with expressive voting among the middle classes, and another in the centre-left (Haddad), well voted among the lower income population. Still, as numerous studies of political communication show, certain marketing actions are statistically effective, and can make the difference between winning and losing an election. Confirmation bias and media illiteracy play central roles in these moments of polarization.

videos, memes and photographic montages, but not audio. This article seeks to fill part of this gap by investigating how audios that went viral through WhatsApp groups, remediate (Bolter and Grusin 1999: 46) radio language, borrowing elements such as colloquial speech, tactics of persuasion and intimacy with the listener.² Our hypothesis holds that some of radio rhetoric's communicative dispositives are also present in WhatsApp audio political messages.

In our research, we combine different methods such as radio content analysis inspired by Argentine researcher Jose Luis Fernández's (2012) work on radio's discursive offerings, with data mining techniques. This article, however, emphasizes an essentially qualitative analysis.

The *corpus* includes 98,000 audios gathered at 220 WhatsApp Brazilian political groups accessed by open-entry links from June to October 2018. The eighteen most forwarded (over 100 times each) voice messages are qualitatively analysed in this article.

FAKE NEWS' DYNAMICS

The role of online disinformation in elections has been a matter of concern for researchers and authorities, particularly since the election of Donald Trump in the United States (Rosenberg et al. 2018) and the controversial Brexit referendum (Quinn 2018), both in 2016. Although social media appropriation is quite heterogeneous around the world, posing challenges to determining its electoral effects (Dimitrova and Matthes 2018), Brazilian elections were among the first ones to experiment the use of WhatsApp for the diffusion of political disinformation and the so-called fake news.

According to the Reuters' Digital News Report (Newman et al. 2018), from 2014 to 2018, the number of people using smartphones as a news source in Brazil rose from 35 per cent to 65 per cent, while the number of computer users decreased from 64 per cent to 62 per cent of the population. Facebook's use as a news source fell seventeen points between 2016 and 2018, reaching 52 per cent of the Brazilians, while the use of WhatsApp grew, reaching 48 per cent. Twenty-eight per cent of the respondents reported using both networks, and 85 per cent had concerns about fake news online.

Launched in 2009, WhatsApp rapidly expanded its network of users all over the country. When the elections took place, around 120 million out of 200 million Brazilian citizens were using its instant messaging, according to a Datafolha Institute survey. That represents 66 per cent of the voters, or 97 million people. Most of them were prepaid mobile phone subscribers, with limited access to the internet – phone companies in Brazil usually allow these subscribers to access WhatsApp and other social media for free, without data usage.

Considering the relevance of this access among lower income populations, audios can be a powerful tool for political communication, able to reach millions of functionally illiterate adults. These subscribers are at a disadvantage when it comes to determining the origin of received information, facilitating high-scale disinformation strategies. In addition, paywalls limit access to traditional media companies, turning WhatsApp into the only digital source of information for millions of voters in Brazil.³

Aware of the new context, Brazilian Superior Electoral Court (TSE, in its Portuguese acronym) passed Resolution 23.551/2017, establishing limits to digital 'boosting' in social networks sites. This regulation prohibits the use of

bots to achieve political advantage. According to the Institute for Technology and Society of Rio de Janeiro (ITS Rio) researchers Caio Machado and Marco Konopacki, the resolution apparently had an effect on the distribution of fake news and the use of bots on other social media platforms such as Facebook, but not on WhatsApp. The researchers monitored 110 WhatsApp groups with open-entry links from 17 October to 23 October 2018, between the two rounds of the Brazilian presidential election, and identified strong evidence of automatically generated messages. The average number of messages sent by the ten most active users (229 each) was 25 times greater than the general average (nine messages per user). The intervals of message sending were very short, between one and twenty seconds. The analysis also detected huge overlapping of members, with 223 pairs of groups that shared more than ten users (Machado and Konopacki 2018).

Although acknowledging critics of the term as a concept (Wardle and Derakhshan 2017), we understand that fake news became a popular expression in an era characterized by post-truth (D’Ancona 2017; Keyes 2004) and can be understood as a weapon for disinformation strategies (Gomes and Dourado 2019; McNair 2018). The dynamics of fake news spread, funded by groups aiming to achieve political results, usually involve the creation of a network of automated fake profiles, used to mobilize real supporters by sharing a huge volume of misleading information. Most of these hyperactive users operate using mobile phone chips from abroad, with anonymous profiles with no previous history, in order to evade Brazilian electoral regulations.

Interviews conducted by Rio de Janeiro State University’s INCT.DD researchers indicate that media and IT professionals were hired to produce and spread political fake news. One team was composed of a designer, three network analysts, a data scientist and a statistician, acting alone and in parallel to the official campaign, working since 2017 on preparation and testing these techniques. WhatsApp groups and strategies were offered to campaigns, including content production and special performance during key events. There is investment in the production of memes and edition, broadcast to potential supporters and the network, which will give the first boost for the campaign to be supported by ordinary people. The production of messages grows during key moments – debates, interviews, incidents, vote counting – in which the focused candidate is participating. These professionals are not directly engaged in ‘getting votes’ or defensive strategies, but in a competition to raise doubts about opponents and reset the agenda, in order to move the public eyes away from the issues that would harm their candidate.

‘WhatsApp is the new Deep/Dark Web’, said one of the interviewed professionals offering a glimpse of WhatsApp combination of anonymity of the primary source granted by cryptography and possibility of large-scale reach. Key points in these strategies are: buying of datasets associating mobile phone and ZIP codes (segmenting targets); multiple prepaid phone chips used to share content on the so-called click farms; hiring of automatic systems and professionals dedicated to the dissemination of fake news in order to cover up the use of bots and reduction of investment on easily trackable social networks.

Considering that any user can put up a political group, gather people, receive and forward information without being reachable through browser searches, the structure of interconnected political groups is largely opaque. However, we can identify network models and patterns analysing partial network graphs that help to predict its global dynamics. This is not possible

4. The audio, investigated by Brazilian fact-checking consortium Comprova, was recorded by another priest, Apóstolo Rina.

through simple quantification, considering that network topology fosters unequal information flows. Sharing in a group densely connected to other groups has a different potential to go viral if compared to relatively isolated ones. Two groups with the same number of connections could have different roles in the network – being connected to 100 isolated groups is very different from being connected to 100 highly interconnected ones. Otherwise, a quantitative approach ignores the structural differences between groups and people who participate in them. In this sense, simple quantitative analysis would consider all nodes in this network as if they were equivalent, ignoring basic dynamics of complex networks. That is the reason why we focused on qualitative analyses of the audios.

There were many reports of fakes and audios deliberately removed from their original contexts to confuse voters. One of these, supposedly recorded by Catholic pop star priest, Marcelo Rossi, who denied its authorship, favoured Bolsonaro and circulated in countless groups (UOL Confere 2018a).⁴ Rossi had a popular morning programme at Globo Radio, a popular station owned by the biggest Brazilian media group. He left the station in May 2019, after seventeen years. His previous audience reached more than 1.5 million people per minute. In recent years, however, the number of listeners declined. Thus, it is no surprise that messages sent along with the audio started attributing it to another pop priest, Fabio de Melo, who also denied its authenticity (UOL Confere 2018b). Melo anchors a popular radio programme at *Canção Nova*, a Catholic station with a dozen affiliates all over the country.

Later, WhatsApp publicly recognized that public groups were used to disseminate disinformation in Brazilian elections. Public policy manager and global election leader, Ben Supple, confirmed that the huge amount of messaging by automated systems in order to reach millions of voters violated their terms of service. It led the company to restrain forwarding in the platform (reducing it to a maximum of five receivers per forward) and to implement a proactive strategy in monitoring polls in India, Indonesia and the European Parliament. According to Supple, 2 million WhatsApp accounts were shut down every month because of illegal use of bots. 'We always knew that the Brazilian election would be a challenge. It was a very polarized election and the conditions were ideal for the spread of misinformation', said the manager, quoted by *Folha de S.Paulo*. 'In Brazil many people use WhatsApp as their primary source of information and have no means of verifying the content' (Mello 2018b: n.pag.).

In order to identify the mechanisms of fake news spreadability (Jenkins et al. 2013), Brazilian National Institute of Science and Technology in Digital Democracy (INCT.DD) started to analyse WhatsApp groups focused on political issues in 2017. The initiative involved researchers from the most important universities in Rio de Janeiro, the second biggest metropolitan area in the country – Rio de Janeiro State University (UERJ), Fluminense Federal University (UFF) and Pontifical Catholic University of Rio de Janeiro (PUC-Rio). The researchers identified a network composed of 220 WhatsApp groups – all of them with open-entry links – supporting six different candidates. This sample of groups was composed upon a snowball methodological procedure. The authors entered a series of groups through an open-entry link found in previous studies and started to scrap for links that circulated in these spaces until a saturation point was reached. Those groups put together approximately 21,000 anonymized profiles indirectly linked through connections to WhatsApp groups.

INCT.DD has published several articles about disinformation structure and fake news dynamics in Brazilian election, mostly focusing texts, images (memes and stickers) and videos that became viral (Santos et al. 2019; Dourado and Gomes 2019; Mendonça and Freitas 2019; Santos and Santos 2019; Mont'Alverne and Mitozo 2019; Chagas et al. 2019a, 2019b; Santos 2019). In this article, we investigate WhatsApp audios for the first time, bringing a new approach to the issue by combining political communication, data mining and radio studies methods and theoretical framework.

METHODOLOGY

This analysis of radio content is based on the contributions of Fernández (2012), in Kischinhevsky's (2016) multi-method perspective. We understand that this categorization, although originally built for the research of radio programming, can also be applied to audios that circulate on WhatsApp.

Following a socio-semiotic approach, Fernández asserts that the analysis of broadcaster's discursive offerings must take into account: rhythm (i.e. speed of the speakers, use of long or short phrases, quantity and alternation of included genres, such as music and news); the engaged voices (number of speakers, their representation in terms of gender, age, accent); professionalization (experienced speakers or without technical preparation); overlapping relationships, imbrication or differentiation of expressive materials (word, music and noise) and the general universe of music included (regional, great cultural categories such as classical or popular) (2012: 135).

However, traditional content analysis codifications, with division between columns of text and sound effects, do not apply for the object that interests us.

Observing texts made up with sound is an especially hard task [...]; fifteen hours of recording results in fifteen hours of a first listen; if notes are taken while listening, that first time becomes thirty hours of work. And find what you want to hear again? It is better to be wordy from the beginning, registering every moment that interests us, otherwise the thirty hours of the first listening become sixty. Then the superficial analysis begins: the climates, the differences in thickness, the similarities of genres. If you want to start reading the registers (another twenty or thirty hours of work, doing it quickly), however, confronting them, the decision is almost always to listen again, because there is nothing left of the radio. The recordings look like cell phone text messages or the results of an uncontrolled chat: the radio spaces, which we protect and conceptualize, the co-presence of music and words that serve to differentiate these texts from those of the usual radio shows, they disappear: with luck, music and words coexist separately even though in parallel as in a cinematic script.

(Fernández 2012: 128–29, translation added)

In our analysis of radio content, applied to WhatsApp audios, we therefore decided to start from a series of categories systematized by Fernández:

- Textures – Reconstruction of the 'first impression' of the sound coming from the speaker, if it consists of screams or whispers, if the rhythm is frantic or not, if there are evident mixes. We also observe the extension of the sentences; the number of genres included and the dynamics between

them; the number of voices and their classification based on gender and age (children, youth, adults, elderly); the universe of vocal education (does the announcer raise his voice in the old fashioned grandiloquent style?); the relationships of overlapping or differentiation between the elements of expression (words, music, noise); and the general universe of the music included (popular or erudite)

- Analysis dimensions – Audios' theme; rhetoric; figures of speech; discursive construction operations (subtraction, addition, switching, exchange, transmutation), referencing (comparison/contiguity, condensation/displacement, anchoring/relief, enlargement/attenuation, concreteness/abstraction) and insertion (expression/content, encapsulation/sequencing, syntagmatic/paradigmatic)
- Enunciative – This category unfolds from the previous ones and seeks to understand relations between enunciator and enunciatee, based on types of opposition (symmetry/complementarity, subjection/independence, hierarchy/equality, exclusion/inclusion, cultural presupposition/segment or discursive type assumption) and the persons engaged in communication (I, You, He/She etc.).

(2012: 133–53)

Despite the possibility of interpersonal conversations, WhatsApp favoured the circulation of audios that sought wider audiences during the Brazilian elections, sympathetic to radio. Although occasionally addressed to specific interlocutors, these audios began to circulate in groups, being replicated thousands of times and making it often difficult to certify their origin in private conversations. A point that particularly interests us is the way in which audios aimed at a massive audience were discursively constructed simulating an interpersonal conversation, bringing together elements that allow their appropriation and encourage their distribution to broader networks.

More than 1 million messages were gathered and downloaded from the selected groups from June to October 2018, Brazilian electoral period. A script was written to decrypt the messages and access the audios. After that, 98,000 audios were identified by the use of codecs – mainly MP3 and OGG – and then extracted.

Another challenge was to establish a *corpus* of analysis. How would we be able to deal with such a huge amount of data, in a qualitative way?

Using data mining techniques, we began to observe some recurrences, (i.e. identical repetition of texts associated to the sharing of videos, memes and audios). Hence, we have ranked the posts in order to identify the most shared in the investigated groups. Almost half – eight out of twenty – of the most shared posts included audios, an evidence that audio media played a major role in the elections' social media debates. After a new round of data mining, we identified eighteen audios with major circulation, shared at least 100 times, accompanied by the same texts, totalling 3622 forwards. Several audios were found in different URLs, but the recurrence of texts and the recordings' lengths allowed us to dismiss repetitions. Still, we are not able to assert that these audios have not been forwarded through additional edited versions that could have escaped our script parameters. Although the initial corpus of 98,000 audios was collected from groups of different ideological characteristics, the most viral audios show clearly an inclination to the conservative political spectrum. That's why Bolsonaro is mentioned several times in our sample.

Rank	Audio length	Text frequency	Text associated to audio forwarding
1	1 min 48 s	401	Flood it in the groups to see if until Sunday (elections' day) the TSE (Brazilian electoral superior court) gets ashamed and see that we are not stupid.
2	3 min 7 s	303	I have not heard anything so amazing, exciting and complete about Bolsonaro. This lady is to be congratulated for the intelligence and sensitivity of putting all the points that frighten us too.
3	1 min 45 s	252	Bolsonaro clearly explains why he no longer leaves home and why he won't go to any debate until the elections.
4	4 min 26 s	231	My friends, after hearing this audio I have to reaffirm my admiration for the excellent (journalist and Bolsonaro's supporter) Alexandre Garcia. Perfect analysis, no matter who gets hurt. It is the best active journalist in the country. Please spread the word.
5	6 min 12 s	229	Globo (leading Brazilian media group) is at all costs trying to identify this employee who made this audio/Listen and spread URGENT. Globo is at all costs trying to identify the employee who made this audio. It's all there.
6	3 min 6 s	204	IF HALF OF THE BRAZILIAN PEOPLE COULD UNDERSTAND HALF OF THE MESSAGE BOLSONARO SPEAKS HERE PEOPLE WOULD BEG FOR HIM TO BE PRESIDENT OF BRAZIL URGENTLY!!!!!!
7	45 s	203	Boy, people are so crazy about Bolsonaro that they are following a funeral procession thinking that is his motorcade.
8a	4 min 13 s	201	Havan's owner (Luciano Hang, one of main Bolsonaro's financial and political supporter) information. The situation is serious.
8b	3 min 42 s	201	Some Globo artists created WhatsApp groups just to debate the election campaign. Then (actress and Bolsonaro's supporter) Susana Vieira came and ouch! Nailed it.
10a	1 min 46 s	180	Colonel Reis, Military Police chief of staff, just sent me. Kick their asses.
10b	5 min 28 s	180	Guys, I'm Gisele Musse, pediatrician in Curitiba, and the audio that follows is from my husband. It's not fake. Listen up.
12	6 min 23 s	171	Listen to this audio about Niobium and realize that Itaú (biggest Brazilian bank) will be mentioned. Itaú. Amoedo (presidential candidate for the Novo Party, right-wing and Bolsonaro's rival). Amoedo. George Soros. George Soros. New World Order Financing the Left of the Planet. Do you understand why they want to kill Bolsonaro? Listen to the audio.
13a	2 min 45 s	162	KOMEKO, THE LARGEST MANUFACTURER OF AIR CONDITIONING OF BRAZIL, UNDERSTAND THE RISKS. SEE AUDIO [sic].
13b	1 min 21 s	162	Presidential candidate Senator Alvaro Dias has just delivered bombastic testimony on a Paraná radio station. Listen and pass it on.
15	1 min 29 s	143	Testimony of a colleague Federal Policeman who works on the team responsible for Captain Bolsonaro's security.
16	1 min 36 s	142	After such a prayer, it's over for Haddad.
17	1 min 42 s	135	SEE THE DESPAIR OF GÉRSON FLORINDO PRESIDENT OF PT IN UBATUBA. LISTEN.
18	1 min 7 s	122	Everybody is tense. Let's listen to a song by (country singer) Zezé di Camargo to relax.

Most shared audios.

5. On 6 September 2018, the far-right candidate was stabbed in a street assembly. Police concluded it was a lone wolf with mental disorders, but there were lots of conspiracy theories and fake news about the case, which we will not be able to deal with in the scope of this article.

In the next section, we describe the audios listed.

AUDIOS' DESCRIPTION: THE WIDESPREAD OF FAKE NEWS

The most shared audio (401 times accompanied by the same text) describes, in one minute 48 seconds, an allegedly fraud in electronic ballot boxes. A man, with an ordinary, martial voice, claims to be 'sergeant Hercules, from Federal District Military Police' and says that the ballots' digital certification is corrupted. Conspiracy theories surrounded the polls, and Bolsonaro supporters shared allegations that electronic ballot boxes were not safe, being used to manipulate the results (Santos 2019). The man addresses an audience of WhatsApp groups' members. There is no remarkable sound ambience, it is a straight message, using basically first (testimonial) and second person (enunciatee/listener). At the end of the audio, the man states: 'I am witnessing this here, you understand, and I'm responsible for the audio'. A clear attempt to assert its authenticity and, at the same time, a call for this virtual troop mobilization.

The second most shared (text frequency: 303 times) was a clearly rehearsed speech, with three minutes seven seconds extent. An anonymous woman rebuts reasons to fear Bolsonaro's imminent victory attacking Workers Party's alleged practices and proposals, such as 'legalization of abortion', 'early eroticization of children', 'indoctrination' of students, 'spreading of hatred among people camouflaged in the defense of minorities' and the 'reversal of values in a sick and corrupt society'. At the end, the woman's voice gets choked, as she was supposedly starting to cry, in an effort to establish empathy with the audience.

The third most shared (text frequency: 252) is an adaptation of a Bolsonaro live speech in Facebook, claiming that he would not debate with his rival Fernando Haddad because of the risk of another murder attempt.⁵

The fourth most shared (text frequency: 231) was a comment made by political journalist Alexandre Garcia favouring Bolsonaro, on a popular radio station called Itatiaia at Minas Gerais' state capital, Belo Horizonte, third biggest metropolitan area in the country. Former press officer of General João Baptista Figueiredo, last president of the military dictatorship in Brazil (1964–85), Garcia is also a political commentator for TV Globo, the largest media group in the country. His comments are distributed to more than 300 radio stations. In this particular audio, the journalist says that these elections are the 'most free' in history, because social media 'has set free the voter from other influences, from TV, radio, journalists, artists'. Using Itatiaia's signature fanfare, the audio borrows from radio's legitimacy and familiarity.

The fifth (text frequency: 229) was an audio attributed to an alleged Globo TV journalist, claiming that there was an editorial orientation in the biggest Brazilian media group to 'finish Bolsonaro', and that Workers Party political propaganda was much more exhibited than the far-right candidate ones. In a six minutes twelve seconds audio, simulating a conversation with an intimate interlocutor, the man says that 'Globo is very afraid', because it is losing audience to social media. 'The biggest fear is from WhatsApp, which you won't control', adds the alleged journalist, mixing media context and political propaganda.

Globo thinks it can regulate what is and what is not fake news. Drop it. It's time to grow up. The truth today is in the palm of your hand, on your cell phone. Let's put Bolsonaro there, so we can see Brazil in a more honest way for everyone.

The text associated with this audio feeds from conspiracy theories and calls on listeners to spread it.

The sixth in the ranking (text frequency: 204) is an edited version of an old Bolsonaro congressional speech defending the 1964 military coup d'état and attacking the 'cult of Marxism that killed more than 100 million worldwide'. It can be identified from discursive markers, as moments when he addresses the Chamber of Deputies' president according to legislative protocol.

The following, shared 203 times accompanied by the same text, is a burlesque audio in which a woman tells an implausible story about confusing a Bolsonaro support motorcade with a funeral procession. It is an allegedly leaked part of a conversation between friends, recorded by phone and including ambient sounds. We are not able to assert if this audio is a staging or not. The voice is amateur, with a pronounced Brazilian north-eastern accent, edited to highlight the humorous character of the message.

The eighth (text frequency: 201) is an audio attributed to a businessman named Luciano Hang, the owner of retail company Havan, calling on people to flood their networks with hashtags in favour of Bolsonaro and go to the streets carrying Brazilian flags. The man accuses Workers Party of planning 'things from hell', such as expropriation of 'free rooms' in residences to house homeless people, drug addicts, prostitutes and transvestites. The tone of the message is rousing and inflamed, emphatically calling people to action, almost like a rally speech. It is not possible to assert its authenticity, and the audio tries to draw credibility from the fact that Hang was one of the most active businesspersons in Bolsonaro's campaign.

With the same text frequency (201), we found an audio supposedly recorded in a Globo artistic cast WhatsApp group by Suzana Vieira, a famous actress. The audio seems to be a direct answer in a WhatsApp discussion with fellow actors and actresses, which supported Haddad's candidacy. Suzana has not denied its authenticity.

The following audio (frequency text: 180) also denounces supposed fraud at the electronic ballot box, which allegedly was previously set to register only Haddad votes, preventing voters from choosing Bolsonaro. An anonymous voice begins hailing WhatsApp group listeners: '[g]uys there, guys in the group, guys from Zap (WhatsApp). There are several complaints coming even from Facebook that several ballot boxes [...] pay attention [...]'. The man does not identify himself, but the text that comes along with the audio asserts that he is a certain 'Cel Reis, chief of staff of the Military Police', without informing in which state he works as a police officer. It is not possible to assert its authenticity. At the end of the audio, the voice reinforces the call to political radicalization, flirting with a religious war tone: 'It's war. Unfortunately, it is war, and we must win this war. Good afternoon everyone, be with God, God bless you. Don't leave the polling stations!'

There is another audio with the same frequency text (180). An alleged doctor with southern accent claims to have assisted mother and son, Venezuelan refugees, and accuses Haddad of supporting the Venezuelan regime and its president, Nicolás Maduro. The audio is addressed to his wife, but opens up the possibility of sharing: 'Good morning, Gi. Gi, I'll record a video here for you. If you think you should pass it on to your WhatsApp contacts, pass it on'. Interestingly, there was no viral video record, only audio. In the end, the man changes the tone of personal experience narrative to explicit political propaganda and says that, in the elections, 'we will have to work for Bolsonaro' because 'it is the option we have to get rid of the PT' (Workers Party). 'It's not

6. At the Medical Portal of the Federal Council of Medicine, there is a registered paediatrician named Gisele Alcântara de Oliveira Musse. See: https://portal.cfm.org.br/index.php?option=com_medicos&Itemid=59#buscaMedicos. Accessed on 12 October 2019. The photo is compatible with the Facebook profile, although it is not possible for us to attest that she is the person named in the posting and that the audio has in fact been recorded by her husband.

fake news, it's not fake news, it's really serious. I have the patient's name, but I won't say it even for ethical reasons. This was an experience I had here at the Santa Felicidade health clinic', he adds.

It is not possible to know which clinic is this, because there are locations with this name in several cities on southern Brazil, such as Curitiba and Cascavel. The mystery grows as we see that the text associated with the post attributes the sharing to the alleged doctor's wife, identified as 'Gisele Musse, pediatrician in Curitiba'. On Facebook, however, Gisele Musse's personal profile has no friends or posts. There is a professional profile, 'Gisele Musse Pediatria', that was created in August 2018 and has not been updated since the episode, in September 2018. In her last post, many people publicly questioned her about the authenticity of the audio. Surprisingly, a supposed friend responds to the comments as if she were Gisele herself, evoking the impression that there was a confusion in managing fake profiles: '[g]ood afternoon. I have received many contacts questioning the soundness of the audio made by my husband and shared by me on WhatsApp yesterday. YES! IT'S REAL!' ⁶

Ranking on the twelfth position, there is an excerpt from a debate programme about niobium, a supposedly so valuable mineral that would make it possible to pay minimum income to every Brazilian and generate revenue of trillions of euros. An 'expert' is presented as João Guerreiro, defendant of a new military intervention, who suggests that it is an edited version of the far-right web radio programme Rede Brasil.Net. The unidentified interlocutor is quoted as legitimizing the 'information' about niobium: he denounces 'large organizations, international pyramid', which would prevent a 'military intervention'. Then he claims: '[w]e can no longer be slaves'. The text associated with the audio brings repeatedly the names of Amoedo, Partido Novo candidate who disputed right-wing voters with Bolsonaro, and George Soros, the Hungarian-born tycoon accused by the international far right of being a communist financier – a tagging strategy to create negative *buzz* around those names.

The following audio (text frequency: 162) brings public support from the owner of air-conditioning manufacturer Komeco, Denisson Moura de Freitas, to Bolsonaro. The businessman announces subsidies for stickers and t-shirts and summons employees for a "'Bolsonaro look" working week'. The speech is short and direct, addressed to workers' WhatsApp groups. Denisson did not deny the authorship of the audio. The coalition led by the Workers Party appealed to the Electoral Court alleging abuse of economic power, but the complaint was rejected two months after the polls.

With the same text frequency, another audio brings a brief speech by senator Alvaro Dias, a center-right candidate for the presidency. He makes allegations relating the Workers Party to a series of murders. The associated text presents the recording as a 'bombastic statement' to a radio station in the state of Paraná. The sound ambience collaborates to build a sensationalist tone, typical of the journalist coverage of criminal occurrences: a police car siren that passes very close to the senator coincides with the beginning of the speech.

The next audio (text frequency: 143) is attributed to an unidentified federal police officer who was supposedly working on Bolsonaro security team. The short speech, from a male, untrained voice, aims to represent the candidate as an ordinary person, 'who speaks the truth'.

The following (text frequency: 142) is one of the most shocking audios. It brings the voice of a child praying for Bolsonaro's victory and the defeat of 'Lula's friend', Fernando Haddad. In an apparently rehearsed and brief

speech, the girl says Lula is the ‘biggest stealer [*sic*]’ of the world. She’s accompanied by a background woman’s voice, which repeats ‘Amen’ at the end of every sentence. The associated text does not bring context, but it sounds like an audio recorded in an evangelical worship or in a Christian radio show.

The seventeenth most shared audio (text frequency: 135) brought a Workers Party supporter calling on voters to supervise evangelical cults to prevent proselytizing. It is a simple one minute 42 seconds audio, in which the man does not address his speech to anyone in particular, weakening the communication’s outcome. Surprisingly, the audio became viral because of Bolsonaro supporters, which re-signified the speech, claiming that it was a chairman of a municipal Workers Party directory in despair with Bolsonaro huge advantage among evangelical believers. In an interview to a local newspaper, Gerson Florindo acknowledged the authorship of the audio, but a fact-checking agency reported that he was no longer party president in the city of Ubatuba, São Paulo. The agency shows that Florindo has been the target of several fake news, such as having dressed as Bolsonaro supporter to criticize Haddad in a video (Matsuki 2018).

Finally, the eighteenth most shared audio with the same associated text (122) was a jingle pro-Bolsonaro by country singer Zezé di Camargo. Another important source of support for the far-right candidate was the large number of farmers. The song’s lyrics say: ‘In my prayers, I will ask God for 17 to win’ (reference to Bolsonaro’s number at the electronic ballot box). ‘He is a Christian, he is like me, my whole family will vote, he is white, black and poor, he is a patriot and he has to win’, adds the lyrics, which seeks to relate Bolsonaro to Christian and nationalist values and, at the same time, dismisses accusations of racism raised after statements against Brazilian natives and Afro-descendants (Brum 2018).

The majority of texts associated to these audios include the use of online advertising tactics. There are recurrences concerning viral dynamics (‘[i]t’s not fake. Listen to the audio’, ‘[s]ee the audio [*sic*]’, ‘[l]isten and pass it on’), conspiracy theories (‘[i]t’s all there’, ‘[d]o you understand why they want to kill Bolsonaro?’, ‘[t]he situation is serious’) and mocking expressions (‘[t]hen Susana Vieira came and ouch! Nailed it’, ‘[k]ick their asses’). The use of caps lock also brings some urgent tone to three of the messages listed, screaming at the audience for its attention.

ANALYSIS AND CONCLUSIONS

Three audios listed are directly linked to radio stations (numbers 4, 12 and 13b). One is a Facebook live adapted to circulate in audio media (number 3), and another one, an old Bolsonaro speech on the Chamber of Deputies (number 6). However, several feature supposedly leaked conversations (numbers 5, 7, 8b, 10b and 15) or messages explicitly addressed to WhatsApp network groups (1, 2 and 10a), operating in a *radio grammar* – colloquial speech, addressing to undetermined listeners and mixing structures used in informative texts with personal opinions and hate speech.

We were able to identify evidences that massive audio messaging borrows elements from radiophonic language, such as intimacy and colloquial speech, to accelerate disinformation and fake news campaigns. Rhetorical figures such as reiteration and structures typical of radio advertising, such as testimonials, are also mobilized in the production of these audios.

WhatsApp audios analysed in this article resort to mechanisms traditionally used by radio to create empathy, as it simulates dialogue with idealized

listeners. However, those audios also establish new forms of mediation, seeking increasing engagement and taking advantage on the culture of sharing contents in social media by remediating radio.

The relative anonymity of the audios sent to radio programmes fosters confessionals, anonymous speeches, placing private themes for public discussion without personal stigmatization. In this scenario, one of the recurring communication repertoires refers to denounces and requests for help, usually based on personal experiences or situations that affect the group as a whole (Winocur 2002: 125–203). It is in this sense, there seems to be a phenomenon similar to remediation involving Latin American radio programmes and electoral use of WhatsApp audio. Both are marked by calls from people with low income, presenting denounces based on their personal experiences and proximity to events, obtaining answers from radio professionals or specialists in a colloquial, intimate language. Thus, as proposed by Winocur, the very definition and distinction between public and private is in tension. The diffusion of the electronic media and the stigmatization of professional politics seem to provoke an important reevaluation of the private sphere.

Although the so-called narcissistic modes of insertion in the public space are often associated with internet technologies by authors such as Zizi Papacharissi (2010: 132), it is important to note that these modes had already been explicitly addressed by studies on the participation of listeners in Latin America radio programmes.

In 2018 election, WhatsApp played a major role, leading a disinformation campaign that must be object of further investigations. The huge circulation of audios on this platform, most of them produced as part of communication strategies aimed at influencing voters, offer an initial discussion about how this content remediates radiophonic language, borrowing some of its elements and introducing new ones.

It seems that radio content competes with audios designed to sensitize listeners, in a personal approach, trying to reach the same audience. WhatsApp expansion through zero rating and the decrease of AM broadcasting seem to benefit the former.

Pseudo dialogues allegedly leaked from other groups and supposed conversations that ‘fell on the net’ tend to go viral, challenging traditional media and fact-checking agencies. Unlike traditional media contents, these supposed leaked audios come forwarded from the listeners’ social networks – a friend, a cousin, an uncle – which borrows some level of credibility and authenticity from interpersonal communication. Intimacy built in audio strategies becomes a powerful weapon, spreading disinformation with unprecedented reach. It may be correlated to all types of aggression suffered by feminists, human rights activists, left-wingers and intellectuals, many of them seeking for refuge in other countries.

This investigation also poses questions about methodological approaches that we are just starting to understand and trying to address. Further analysis may focus on network metrics of fake news’ audio cycles and the impact of anonymous voices on disinformation campaigns.

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