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Are they bots? Social media automation during Chile's 2017 presidential campaign

¿Son bots? Automatización en redes sociales durante las elecciones presidenciales de Chile 2017

São bots? Automatização nas redes sociais durante a campanha presidencial no Chile 2017

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ABSTRACT
This research sought for automated strategies of creation or diffusion of electoral propaganda in social media during Chile's 2017 presidential campaign. We collected and analyzed almost 2 million tweets that utilized election hashtags or were linked to one of the candidates or their campaigns; we also collected and analyzed 2,927 official Facebook posts of the candidates and 453,668 comments. While on Facebook the behavior was relatively normal, we discovered that on Twitter there were digital brigades who act autonomously in astroturfing campaigning during the first round of the election.

RESUMEN
En esta investigación se buscaron estrategias automatizadas de creación o difusión de propaganda electoral en redes sociales durante la campaña presidencial de Chile de 2017. Se recolectaron y analizaron casi 2 millones de tuits sobre la elección o vinculados a alguno de los candidatos o sus campañas; en Facebook, se analizaron 2.927 publicaciones oficiales de los candidatos y sus 453.668 comentarios. Mientras que en Facebook el comportamiento fue relativamente normal, en Twitter se descubrió en primera vuelta que hubo brigadistas digitales que actúan de forma autónoma tratando de crear una ilusión de apoyo en las bases.

RESUMO
A pesquisa buscou, estratégias automatizadas de criação ou difusão de propaganda eleitoral em redes sociais durante a campanha presidencial do Chile em 2017. Do Twitter obtivemos quase 2 milhões de tweets que ocuparam hashtags eleitorais ou ligados a um dos candidatos ou suas campanhas, enquanto o Facebook analisou 2.927 publicações oficiais dos candidatos e 453.668 comentários. No que diz respeito ao Facebook o comportamento era relativamente normal, no Twitter foi descoberto que havia legiões digitais que agem autonomamente tentando criar ilusão de apoio nas bases durante o primeiro turno.

Keywords: bots; propaganda; elections; social media; democracy.

Palabras clave: *bots; propaganda; elecciones; social media; democracia.*

Palavras-chave: bots; propaganda; eleições; redes sociais; democracia.

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INTRODUCTION

Being informed of the political and social events is of paramount importance to make appropriate decisions when choosing our authorities. Currently, political information circulates in multimedia ecologies that combine traditional media and social media, which allow opportunities for selective attention and content production different than those already known, generating a complex communication environment (Bennett, Segerberg, & Yang, 2018; Persily, 2017). This new public sphere and the interactions that occur through it facilitate the circulation of political ideas and public policies that influence the results of certain political processes (Arnaudo, 2017; Howard, Wooley, & Calo, 2018). In this context, there is growing international evidence that suggests that political actors use computer propaganda, such as the fabrication of fake news, the use of algorithms and the automation of bots (computer programs planned to execute simple and repetitive tasks), to manipulate public opinion, demobilize opponents and generate false support for certain positions (Howard, 2015; Gallacher, Kaminska, Kollanyi, & Howard, 2017).

In Latin America, the type of computer propaganda strategy used depends on the country; in several countries cyber-troops have been discovered, which are political or governmental groups used to manipulate public opinion, who orchestrate this type of misinformation (Bradshaw & Howard, 2018; Filer & Fredheim, 2017; Forelle, Howard, Monroy-Hernandez, & Savage, 2018; Puyosa, 2017). While studies on misinformation, propaganda and bots have gained relevance since the election results in the United States, Europe and certain countries with political instability, it is also interesting to question whether these dynamics are repeated in countries with different media production and consumption systems, as well as specific electoral regulations.

Some countries with political stability and presumably limited space for the intrusion of foreign powers and their propaganda apparatus, such as Chile, would allow focusing on more natural dynamics that could happen among the voters of this new public sphere. This is the case investigated in this article, whose main objective is to identify whether there were automated or semi-automated strategies for creating or disseminating content in the discussions/conversations that took place on Twitter and Facebook during the 2017 Chilean presidential elections.

In this work, there is a bibliographical review of what is the new networked public sphere and its implications for citizen participation, including the forms and evidence of public opinion's manipulation. It then details how the contents of Twitter and Facebook that participated in the discussion of the 2017 presidential campaign in Chile were collected. Finally, it presents the results on the existence or not of automation and strategies of manipulation of public opinion.

THEORETICAL FRAMEWORK

THE DIGITAL PUBLIC SPHERE

The political public sphere is understood as a communications system that mediates the deliberation of formally organized political institutions in society with those face-to-face deliberations that occur in the foundations of the political system (Habermas, 2006). During the second half of the 20th century, the public sphere was mediated by a professional elite, journalists and other media professionals, as well as by political actors in their various forms (Habermas, 2006; Papacharissi, 2010). Currently, the techno-social infrastructure allowed by digital technologies receives, in addition to the actors already known, the exchange of individual citizens and even anonymous agents that connect and exchange content between them, generating a hybrid networked public sphere, partly digital and partly analogous (Benkler, 2006; Chadwick, 2013; Papacharissi, 2010). This new public sphere has facilitated the circulation of political ideas and public policies, and therefore influences public opinion and the results of certain political processes (Arnaudo, 2017; Howard et al., 2017).

As the 21st century progresses, the professional elites of mass media have lost their power, while the commercial social media platforms and their operating rules become important (Persily, 2017; Tufekci, 2016). The use of social networks for political purposes has had positive results in some areas of civic participation. For example, it has been documented that in Latin America they are an important predictor of political protest, reducing participation gaps traditionally associated with age, gender and other individual socio-psychological features, since those who use these platforms for political purposes also protest *physically* more than those who do not (Valenzuela, Arriagada, Somma, & Scherman, 2016). Social networks have also allowed the creation and expression of civic-digital campaigns in countries traditionally with low participation, conservative and more autocratic, significantly more than in other countries with a

tradition of active citizen participation (Santana, 2015).

In electoral terms, at least in Latin America, it seems that social networks mark a change in the pattern of relations between political elites and citizens. By reducing the operational and technical costs of maintaining an online presence through these platforms, the use of digital tools as campaign resources and sources of political information is universalized (Allcott & Gentzkow, 2017; Braga & Carlomagno, 2018). A positive correlation has been discovered between the candidates' online presence and voting percentages, both in Brazil (Braga & Charlemagne, 2018) and Mexico, where candidates who were actively involved responding to comments on social networks also generated more civic participation (Howard, Savage, Flores Saviaga, Toxtli, & Monroy-Hernandez, 2017). As in the rest of the world, the possibility of directing tailored messages, the so-called microtargeting, to large numbers of people through social networks increases the perception of proximity of voters to power (Bradshaw & Howard, 2018). All these dynamics explain why political campaigns in all sectors see social media platforms as an effective way to connect with their potential voters (Howard et al., 2017).

The 2016 election campaign in the United States, in which Donald Trump was elected, made visible the change in the traditional dynamics of how political campaigns were conducted in Western democracies. Certain limits that were once clear were now difficult to determine; e.g., knowing who is part of the campaign and who is not, or the limit between media attention and advertising, or the difference between news and entertainment. Even the difference between national or foreign sources of information was diffuse in this new public sphere that works partly digitally (Persily, 2017). It was also possible to demonstrate the strategic use of tweets to determine the traditional media agenda: when the candidate had little coverage, he tweeted in greater quantity than when he received more coverage (Persily, 2017).

This trend of increasing use of digital strategies for political campaigns is also found in Latin America. Although in the past the digital divide was a problem for digital campaigns, as Internet penetration increases in the population, through the massive use of social networks on mobile devices, this gap almost disappears. In Brazil, election by election candidates are monitoring the most popular platform and focus their efforts on it, to the detriment of those less efficient or more expensive to maintain (Braga & Carlomagno, 2018).

WHY PUBLIC DISCUSSION ON SOCIAL NETWORKS IS NOT NATURAL

It seems that certain dynamics that occur in social networks, both based on the non-digital characteristics of individuals (Vosoughi, Roy, & Aral, 2018) and the changing features of platforms (Howard et al., 2017) generate conditions that change the form and distort the legitimacy of participation and public debate, increasing the vulnerability of democracy in the West (Persily, 2017).

Bayesian information and decision theories suggest that human attention is attracted by the novelty, since it contributes to productive decision-making and to an update of the understanding of the world; therefore, people share that information to contribute to the well-being of family and friends (Vosoughi et al., 2018). Thus, it has been proven that fake news, being novel, spread faster and more widely than true news on social networks (Vosoughi et al., 2018). This could explain why misinformation, understood as the intentional actions of individuals and groups that –knowingly or not– spread malicious content and fake news (Bennett & Livingston, 2018; Hwang, 2017) has become such a relevant phenomenon, a challenge for a healthy public debate and, consequently, for electoral decision-making (Bennett & Livingston, 2018; Hwang, 2017).

As for the platforms, several researchers have shown that their visualization algorithms recognize popular content and prioritize them on the users' screens to increase traffic and make them profitable thanks to advertising (Noble, 2018; Tufekci, 2016). Therefore, content that travels faster and reaches more people in an organic way is catalyzed by the algorithm, increasing its reach (Hurlock & Wilson, 2011), especially within a same platform that has been designed to control the experience of users, preventing them from abandoning it (Tufekci, 2016). This is how misinformation can spread at a scale and speed that challenges the political and media systems.

As for the content shared, it is known that people voluntarily tend to share more content or news of a moral frame (values, moral prescriptions, normative messages and religious or cultural contents) than other types of content with more objective frames (Valenzuela, Piña, & Ramírez, 2017). Regarding the ideological position, in general people are more exposed to content that confirms their ideas and tend to isolate themselves from opposing ideas (Pariser, 2012), especially when their network of contacts is not very heterogeneous (Bakshy, Messing, & Adamic, 2015). However, it is not

entirely clear if these bubble dynamics are activating or discouraging the form of participation in the public space (Bakshy et al., 2015; Bond & Messing, 2015; Pariser, 2012; Savage & Monroy-Hernández, 2015), which leaves a lot of room to ask about its effects and how to politically move in them.

Under this current public sphere diffuse and changing conditions, it is not uncommon for certain actors to want to take advantage to affect the political results. Although it has been widely documented how certain movements and far-right parties manufacture fake content to mobilize supporters against center parties and against professional media (Bennett & Livingston, 2018), the phenomenon is not only attributable to a group of isolated political actors. This is because the use of social networks to misinform, discredit opponents, manufacture consensus, manipulate public opinion and undermine democratic processes, interfering with elections and delegitimizing trust in democratic organizations, is a worldwide phenomenon (Bennett & Livingston, 2018; Bradshaw & Howard, 2018).

THE NEW SET OF PERSUASION AND PROPAGANDA TOOLS

Propaganda is defined as "the deliberate use of misinformation to influence attitudes on an issue or toward a candidate" (Persily, 2017, p. 68). Currently, in a networked public sphere, this propaganda can originate in any node of the network, from electoral campaigns, individual allies or contributors, media, foreign actors or the same candidates (Persily, 2017). However, cyber-troops are defined as that propaganda directed by government, military or political party actors committed to manipulating public opinion in social networks (Bradshaw & Howard, 2017).

Cyber-troops operate primarily through fake accounts, which can be automated, such as bots, or fake human accounts, which meet the same objectives but through a coordination of operators who manually manage accounts; there are also hybrid or cyborg accounts, whose manual operators combine automation to increase the volume or speed of dispersion with elements of human curatorship, to make them look like legitimate accounts (Bradshaw & Howard, 2018).

International evidence shows that cyber-troops frequently use online commentators who, under false accounts, actively engage in conversations and debates with genuine users through messages and change of valence (influence or deviate the meaning of the conversations), manage boycotts to eliminate legitimate opposition accounts, or act as trolls, which direct messages of hate and harassment directly to individuals, communities and organizations (Bradshaw & Howard, 2018).

Among the best-known strategies of attempts to manipulate opinion on social networks are the generation of fake news and bots. Fake news are "intentional falsehoods spread as news stories or simulated documentary formats to advance political goals" (Bennett & Livingston, 2018, p. 124), and its study has increased in recent years due to the challenges it entails for the media. The power of fake news depends on their level of viralization and, as mentioned earlier, the platforms' type of content and the viewing algorithm play an important role, but also the possibility of automating the interactions of those contents through software created for that, such as bots (Persily, 2017). Hence the relevance that these agents acquire in the current public sphere.

Bots are the analogy of a robot, but work in a digital space instead of a physical one, and "are usually designed to save time and energy of a human author, because they parse and organize information at great speeds, saving human actors from doing the work" (Howard et al., 2018, p. 82). While at first they were software designed to perform simple and repetitive tasks, such as collecting data or answering simple questions, programmers currently use the word bot to refer to "all sorts of different algorithms. Both simple strings of code intended to backup or update personal computers and socially oriented, automated, imposter accounts on Twitter are referred to as bots" (Howard et al., 2018, p. 83). Bots can be legitimate and beneficial, such as those that perform tasks such as reporting news or interpreting weather or census data (Howard et al., 2018), or malicious: those who try to distort and manipulate online surveys, distribute false information or misinformation, or that seek to generate artificial tendencies through the automated promotion of hashtags, stories or likes (Persily, 2017).

Social bots are social network accounts controlled autonomously by a program (Hwang, 2017). These social bots do not communicate with the platform, but do so directly with the code, through the Applications Programming Interface (API) that the platform provides so that developers can interact with it. Most social bots epitomize a real user and, although at first they were easy to detect (accounts with an egg as a profile picture and without information in their biographies), today they are much more sophisticated, are careful of the photos they use and give prefabricated and standard

answers, but well written and with political objectives (Howard et al., 2018).

Political bots refer to software that interact with other user accounts and whose exchange is about politics (Howard et al., 2018). The use of these bots in election campaigns puts campaign regulators in trouble, since the identity of the bot creators is unknown and sometimes impossible to decipher, even with sophisticated methods. For example, "all the worry about shady outsiders in the campaign-finance system running television ads seems quaint when compared to networks of thousands of bots of uncertain geographic origin creating automated messages designed to malign candidates and misinform voters" (Persily, 2017, p. 70). This research is aimed at identifying if there were automated strategies in the Chilean public sphere during the 2017 presidential campaign.

A relevant strategy in social networks is that of astroturfing campaigns, which consists of seeking electoral or legislative victory through the artificial amplification of the image of public support that would agree with a certain premise. This process is designed to create the idea of a public consensus on an issue in which there is no such consensus, manufacturing the perception of grassroots support (Bradshaw & Howard, 2018). Campaign supporters sympathize with these communication strategies, as they make it seem as if large numbers of people support their candidate or their position. Strategies already used previously and explained with the theory of the spiral of silence, in which individuals fail to give their opinion when they perceive themselves as a minority and then people's voting intention approaches the candidate perceived as a winner as the election is nearer (Noelle-Neumann, 1984). The 21st century campaigns use these 20th century lessons utilizing bots with the aim of making their support network look bigger.

EVIDENCE OF ATTEMPTS TO MANIPULATE PUBLIC OPINION IN LATIN AMERICA AND THE WORLD

According to the Global Inventory of Organized Social Media Manipulation, in 2018 the number of countries in which formally organized public opinion manipulation campaigns through social networks were identified increased from 28 to 48 (Bradshaw & Howard, 2018). Among them, several Latin American countries: Argentina, Brazil, Colombia, Ecuador, Mexico and Venezuela. In all of them, a political party or a government agency orchestrated these propaganda activities (Bradshaw & Howard, 2018). Interference is not always generated in the same country; for example, it has been discovered that botnets located in Argentina and Venezuela directly attacked the official candidate in the elections of Ecuador in 2017 (Puyosa, 2017). Or the most documented, that Russia hires teams of people who act as trolls in other countries to influence public opinion (Persily, 2017).

While most of the propaganda is deployed on Facebook and Twitter, in a fifth of the countries mentioned in the inventory, especially in the developing world, there was evidence of disinformation campaigns operating through applications such as WhatsApp, Telegram and WeChat (Bradshaw & Howard, 2018). It is the case of the 2018 Mexican elections: the consumption of content generated in order to confuse was low on Facebook and Twitter, but misinformation could be happening in services such as WhatsApp and Facebook Messenger (Glowacki et al., 2018).

It is not necessarily political agents who spread their own propaganda; in many countries, marketing or communication agencies are hired to do so. The Global Inventory of Organized Social Media Manipulation found evidence of this practice in Austria, Brazil, Colombia, Ecuador, the United States, India, Kyrgyzstan, Malaysia, Mexico, Nigeria, Philippines, Poland, the United Kingdom and South Africa (Bradshaw & Howard, 2018). Another tactic is the recruitment of technologically skilled young people to support manipulation efforts. The same report documented these actions in Azerbaijan, Israel, Russia and Turkey (Bradshaw & Howard, 2018).

In Latin America, the use of automation as a propaganda strategy differs from country to country. In Argentina, during the 2015 elections, bots were found, but with an unsophisticated function, since both candidacies used them to simulate greater popularity and support of their candidates; however, bots did not engage into automated interactions with opponents (Filer & Fredheim, 2017). In Ecuador, a couple of years later, the intensive use of political botnets was discovered, both in favor of the government and the opposition candidate (Puyosa, 2017). Thus, "the main use of botnets on Twitter was to position hashtags with attacks against the opposing candidates and use dirty electoral war tactics" (Puyosa, 2017, p. 56), which included –among other things– reporting legitimate content so it would be temporarily and erroneously removed from a social network (Bradshaw & Howard, 2018). In Venezuela, at a time of political upheaval, the use of bots by the most radical opposition was

discovered, with a specific feature: bots pretend to be political leaders, government agencies and political parties rather than citizens (Forelle et al., 2015).

Some governments have established mechanisms to counter these offensives. For example, Colombia started a fact-checking program for content shared by WhatsApp, and Italy created a website for citizens to report fake news found on social networks (Bradshaw & Howard, 2018). However, it has also been found that some governments and government agencies occupy these applications to legitimize censorship or to launch their own artificial campaigns; there are examples of this in Brazil, Ecuador, Israel and Serbia (Bradshaw & Howard, 2018).

THE PRESIDENTIAL ELECTION IN CHILE

Although there are many factors that determine how and how much political actors are using digital strategies, the vast majority integrate them into their campaigns according to how they perceive the conditions offered by platforms and public opinion (Howard et al., 2017). In each country, in addition, there are laws that specifically regulate the use of social networks for elections. In the case of Chile, it is the Electoral Service (Servel, by its Spanish acronym) that provides guidelines for candidates and citizens. Regarding the use of social networks and digital media, Servel determines that electoral communications are understood as all communications "that transcend the personal circle of contacts and that said services are contracted" (Servicio Electoral de Chile, 2017, p. 23) and candidates and their campaigns should report if they allocate funds for it. On the other hand, the regulation indicates that "all the activity in digital media that does not imply a contracting and payment of these services will not be considered electoral propaganda" (Servicio Electoral de Chile, 2017, p. 24), since it is considered that all communications through social networks are essentially private, whether directed to one or several people, and are part of the exercise of free expression and debate of ideas (Servicio Electoral de Chile, 2017).

Considering the features of the networked public sphere and the dynamics of social networks, as well as the multiple evidence of attempts to manipulate public opinion in the world, this article focuses on two research questions:

- RQ1. Were bots used to influence the discussion on social media platforms during the 2017 presidential campaign?
- RQ2. What kind of automated or semi-automated strategies existed in the 2017 Chilean presidential election?

The following section explains the methods used to answer these questions through the content analysis of Facebook and Twitter.

METHODOLOGY

The main objective of this research is to identify whether there were automated or semi-automated strategies for creating or disseminating content in the discussions/conversations about the elections that took place on Twitter and Facebook during the 2017 elections in Chile. In addition, it seeks to recognize what types of content are those that acquire the greatest reach during the campaign period. The Twitter and Facebook data samples are composed of the intentionality, at least expressly, of participating in the conversations related to the presidential elections in Chile in 2017. Below we detail the data recollection methodology for both platforms.

DATA RECOLLECTION AND PROCESSING

The data used in this analysis were collected using proprietary software developed using the Python programming language.

For Twitter, the program uses an account created for this research and API for Twitter to track existing accounts. By following the accounts, the program receives notifications of publications on these accounts, or that mention them, so it collects the content without the need to make a permanent consultation of the candidates' accounts.

When receiving one of these notifications and obtaining the content, the program processes the text, first extracting the message metadata: author, date, mentions, link and the hashtags used; then, it normalizes the text, eliminating all the mentions and punctuation marks, to end with the plain text of the content and the hashtags, which are the sections that have information about the purpose of the message. Once the text was normalized, the Rake module was used to extract the words associated with each tweet, to categorize them later. Finally, a unique identifier was created for each tweet, calculated using a fixed-size coding of its content, for faster comparisons.

The relationships found through the metadata are stored in a graph-oriented database, Neo4J, which

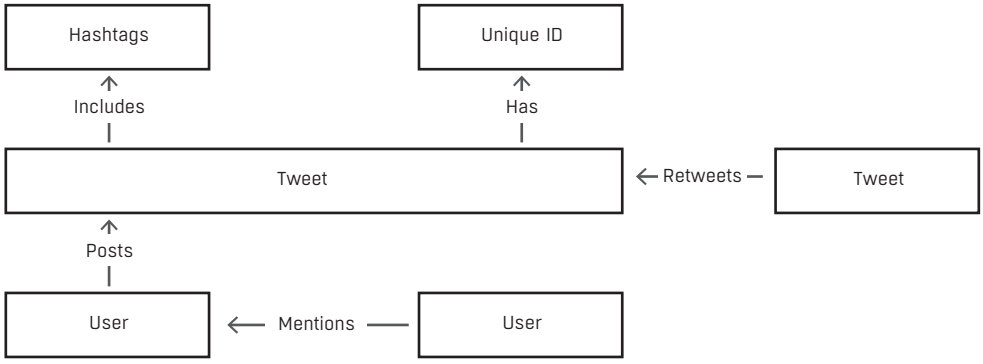

Figure 1. Twitter analysis diagram

Note: each tweet is a node associated with an author, other tweets that retweet the original node, cite or mention it, other accounts mentioned, hashtags they use and a content identifier.

Source: Own elaboration.

allows to simply maintain and consult this type of relationship. As mentioned earlier, we extracted the tweets' pure text and a unique text identifier was created for each one of them. This text identifier was compared among all tweets, generating relationships of original content with replicated content. In addition, we created arcs that link users of the social network according to mentions or retweets of other users' content. Thus, two graphs were created that represent the relationship between all the tweets' authors related to the campaign within the period of the first and second electoral round. Figure 1 explains the diagramming of the analysis. The content was stored in a relational database, PostgreSQL, with date/time, author, content and unique identifier (hash) data.

The tweets were collected from the identifiers (tweets' handles) of the candidates' accounts, the four most used hashtags associated with each candidate and four generic hashtags related to the elections[1]. Although initially only these accounts and hashtags were followed, the program automatically added other existing accounts that exceeded a pre-established limit of publications that mentioned the candidates. Thus, the number of accounts followed by our program increased to more than 200. Given this, new research accounts had to be added to the program (four in total), so that each one followed, in parallel, a certain number of accounts so as not to exceed the limits imposed by Twitter's API.

Once the tweets were collected, the data was cleaned (eliminating those tweets that had no relation to the context, e.g., tweets from Japan that used a hashtag equivalent to that of one of the presidential candidates). To clean, we use the Python NLTK (Natural Language Toolkit) module, determining the language in which the tweets were written, and leaving only those that were recognized as Spanish. We should note that Twitter delivers a language of tweets, but this does not recognize Chilean language (slang), so we use NLTK's Spanish corpus cess_esp, modified with certain *Chileanisms*, to correctly recognize tweets regarding elections.

We alse developed a specific program for Facebook, which consulted the candidates' pages every hour, to obtain new publications or changes in comments. The program uses the Facebook Graph API through the requests module, obtaining a JSON with all the content, which is stored in a documentary database, MongoDB. On the stored content, we used NLTK to make sentimental analysis regarding the publications using the NLTK corpus and modules.

SAMPLE

The Twitter data sample was collected for the first and second round of the presidential election in Chile in 2017. For the first round, we analyzed 461,507 tweets generated between November 1 and 20, 2017 by 72,939 unique users (first presidential round with six candidates). This sample assumes that there is intentionality of the content creators, the repeaters and of linkers in wanting to participate in the discussion about the elections in Chile, because they connect with any of the candidates or the elections' hashtags. For the

runoff, the collection was made between December 11 and 19, 2017 (one week before and two days after the election); all hashtags and accounts associated with the candidates who did not pass the ballot were eliminated, keeping only those of the two rerun candidates (Guillier and Piñera). Thus, we collected 340,873 tweets of 78,954 unique users. In addition, we added keywords related to the general election, which allowed us to increase the total sample to 1,505,137 tweets from 268,828 unique users.

The Facebook sample was obtained from the candidates' official Facebook pages during the first electoral round. We collected 2927 official publications, accompanied by 453,668 comments that other users had made about these publications on Facebook.

ANALYSIS

For Twitter content, we conducted two types of analysis. The first is to identify identical content that would have been posted by different users, both at the same time and at deferred times. In case of identical content, there are three scenarios: 1) If the identical content is posted as original content, but by different accounts, it would indicate some coordination; 2) if this content is posted at the same time in multiple accounts, it involves some degree of automation, and 3) if the content is posted at the same time, but by the means of retweets, it implies a certain automated response.

The second type of analysis was based on the identification of the accounts that had participated in the Twitter discussions related to the campaign in Chile, but that after the campaign were inactive or suspended, presumably for violating Twitter's publication rules, among which is spam, automation, user forgery or other security risks detected by Twitter (About suspended accounts, n.d.). The 100 accounts with more activity of the first and second round were subjected to content analysis to identify what type of content they published and whether or not they referenced a candidate.

To analyze the Twitter sample, we created non-explicit relationships between users given the tweets' contents. For this, a methodology similar to that of Arroba Rimassa, Llopis, Muñoz and Gutiérrez (2018) was used, which uses Twitter as a predictor of political decision. In a simple qualitative analysis, to evaluate the type of content of the accounts identified as relevant –suspicious of automation– we used a manual coding; three coders had to assign the content of each of the 200 most repeated tweets to one of the 15 possible categories (Conservative-religious; Conservative anti-social and/or ethnic movements; Economic Right; Pro-Kast; Pro-Piñera ; Pro-Goic; Pro-Guillier; Pro-Enríquez-0minami; Pro-Navarro; Pro-Arts; Socialist-liberal; Against the right wing social and ethnic movements; Non-political-news; Government-official, News), obtaining 0,889 Krippendorff's alpha reliability between coders. The results of this analysis are only mentioned to identify the type of content of the accounts, but not a content analysis to evaluate the type of material discussed.

RESULTS

The first step in identifying cyber-troops was to search for identical content that would have been generated as original content by at least 10 different accounts during the first presidential round. Thus, 198 contents were identified, of which 189 corresponded to Chilean elections. Of these:

- 25 of the contents are information distributed by official accounts of the Chilean government and its various agencies. Most invited to participate in the elections, like: "@SenceChile[2]: (Participating in #Elecciones2017 is the only way to assert your opinion. Don't stay apart, come on! (Sence Chile, 2017). No government content referred to any candidate or manifested proselytizing content.

- 15 contents offered information with a news frame, without proselytizing content, and that correspond mainly to a couple of community radio stations, whose informative contents have the following style: "@redcomunales: #VotoRegional All the information on the results of the Region of Coquimbo will be available with graphics and multimedia in the #Elecciones2017 sections of @redcomunales[3]". This botnet published the same content up to 48 different times. Only a couple of the contents repeated and posted as original were posted by a national newspaper: "@latercera: #EleccionesLT How will alcohol prohibition work on voting day? We explain it to you #EleccionesChile (La Tercera, 2017a) and "latercera: #EleccionesLT | You are going to vote and do not know until what time can you do it? We tell you!" (La Tercera, 2017b).

Excluding these non-proselytizing government and news framing content, we observe that 82 of the other contents were generated as originals by a minimum

of two accounts and up to 48 different accounts at the same time. Considering the low efficiency in writing the content up to *48 different times* and being something impossible to do with human coordination, we assume that the coordination is at the coding level and not human, so they would be botnets.

Seventy-one of those contents correspond to tweets promoting a deputy candidate who also uses the election's hashtags and to Carolina Goic, the candidate of the Christian Democratic center. The type of content refers primarily to the election of that deputy and, secondarily, to the presidential candidacy; e.g., the following content was published in 33 different accounts at the same time: "Carolina Goic for president! And in the 10th district, Nicolás Muñoz must be deputy! Let's do things well with ethics and responsibility #GanemosConGoic #YoMeAtrevo #PorLoJusto".

However, when we analyze the relationships between accounts and content, the latter were posted by only two botnets, which are self-contained; i.e., although they make reference and mention the official accounts and hashtags of the Goic candidacy, her official accounts do not mention those users. When reviewing the electoral spending of this candidate, we can see an important investment in digital media (5,000,000 CLP; US$7,300) and communication consultancies (10,000,000 CLP; US$14,600) (Servicio Electoral de Chile, 2018).

We must note that these networks disappear in the runoff (that candidate is not in the second ballot and the candidate for deputy was not elected) and many of the accounts (e.g., @votaporlojusto) stop posting as soon as the first electoral round is over. Other accounts, such as @Vale_XLoJusto and @Scott_Pilgrim24, which are part of these networks, although active during the presidential runoff, stop posting the same day, on December 28, 2017. The other first-round networks are made up of a network of communal newspapers that posted six content, as well as one with pro-Guillier content and another, pro-Kast (José Antonio Kast, conservative right-wing candidate).

For the runoff –a second ballot between the two most voted candidates when neither achieves more than 50% of the votes in the first round– we collect data for those two candidates for 10 days. There are 20 tweets marked as originals, but that were tweeted by different accounts. However, all were posted after the election's result and as a way to disseminate the results. Therefore, during the runoff, no botnets were detected with this methodology.

In a second type of analysis, considering the possibility of analyzing the data ex-post, we analyzed the 100 most active accounts of the two months prior to the first round and the 100 most active of the 10 days corresponding to the runoff sample, using as a filter that they were suspended by Twitter up to 10 months after the election.

Thus, for the first round we identified 23 accounts that used the political hashtags mentioned above. However, when analyzing the tweets' contents, only three of them had political conversations, and the others seem to be automated accounts that retweet other accounts to increase the reach of those contents, e.g., television programs, radio, and popular hashtags of the day.

Table 1 shows the users of the three accounts that effectively participated in political conversations, retweeting, responding or posting their own content. The two accounts with the highest number of interactions (@patrickfischer and @El_exorcista) have irregular post patterns: one or two on the first day, they increase to five or seven, they go back down and then they have 25, 30, 40, even 50, interspersed with days with little interaction. Both were suspended after a day with a lot of interaction. Both accounts seem to have some degree of automation, since their conversations are mainly RT from other tweets that support their causes. In the same way, the irregular frequency of the posts seems to be a strategic movement of the software, or of the administrator, so as not to violate Twitter's rules. Although we cannot corroborate it, these two accounts could correspond to cyborg accounts, hybrid accounts whose manual operators combine automation, to increase volume or dispersion rate, with elements of human curatorship to make them look like legitimate accounts.

The third user with a high conversation level that was suspended (@Alhfreddo) has more content of his own. And he could be cataloged as a leftist troll.

For the runoff, and from the analysis of the analysis of the 100 most active and suspended accounts, we analyzed the first 10 to see if they had a specific behavior. @AShumman stands out as the account with more publications; in the two-week period of this study, he has an interesting pattern of retweets from other accounts. The account that he RT the most is that of President Bachelet, in office at that time, as well as other accounts of officials and government agencies. If we make a specific analysis, we can see that most of the interactions are on election day, often retweeting the same content from

User	Type of conversation	Contents	No. of conversations	No._RT_ Reach	RT Average
patrickrfischer	RT < 5 Original	Moral liberal; social and / or ethnic pro-movements.	1647	32150	20
El_Exorcista_	RT < 5 Original	Conservative anti-social and / or ethnic movements; economic right, pro-Kast; Pro-Piñera.	588	1097	1.86
Alhfreddo	Original and RT	Moral liberal; social and / or ethnic pro-movements; against right.	238	945	3.9

Table 1. Summary of accounts with high political conversation suspended during the two months prior to the first election round

Source: Own elaboration based on the obtained data.

other pro-government accounts or against the right-wing candidate; only in a couple of opportunities he adds his own comments about his explicit support for Guillier or about the alleged manipulation of the right. His tweets follow this style: "@AShumman: In conclusion, most Chileans like to pay for health, education and they like AFPs. I don't understand #EleccionesChile4". The pattern and content of publications shows an intention to amplify their political stance, and an automated manipulation cannot be recognized.

In the analysis of the accounts that were inactive after the election and within the next three days, we chose the 20 with the largest number of followers, to observe them in greater detail, discovering two trends: 1) These are the cases in which the accounts were associated with networks of followers of specific candidates, for example, the official candidate of the center-left coalition (such as @RedGullier), which after the election were purposeless, and 2) they are old accounts with a large number of followers that were *revived* for the electoral season, and did not published afterwards, as in the case of @Chains1984. The latter is a case to study in more detail, since it was among the non-active users who made more retweets associated with the Guillier campaign.

Another phenomenon found is related to the repetition of content by several authors constantly. For example, the user @nacionales_cl, whose account was suspended by Twitter, posted the same content 163 times during the campaign period. However, its content was not very influential, since it redirected to the national.cl newspaper website, which posted news of the electoral campaign. But this example shows how the use of hashtags associated with candidates can have an impact not only on the decision, but also on the increase in visits to a specific site.

FACEBOOK

As mentioned in the methodology, we collected 2,927 publications between July and November 2017, as well as 453,668 comments on these publications written on the Facebook official pages of the presidential candidates.

The Facebook analysis allows us to corroborate the existence of collaboration and publication networks that differ greatly between candidates. Although the number of publications made in the period is similar among all candidates (ranging from 258 to 512), the number of comments shows significant differences: they range from 258 in the case of the leftist independent candidate, whose support base was very small, named Artes (i.e., on average one comment per publication) to 165,000 for the candidate Marco Enríquez-Ominami, an independent center-left candidate who has participated in the last three elections and whose best result was 20% in the 2009 election.

As we could access the financial data of their campaign thanks to the reports they made to Servel,

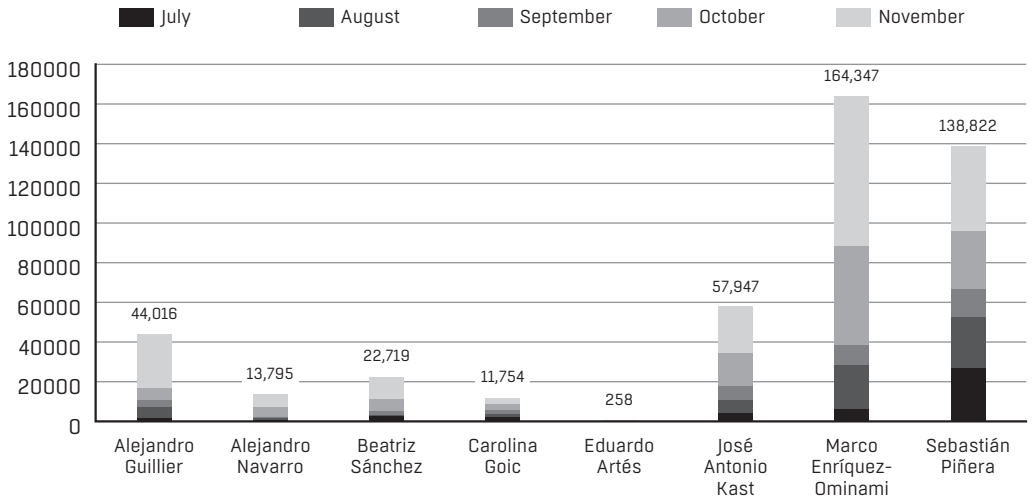

Figure 2. Total number of comments of all posts on Facebook per month

Source: Own elaboration based on downloaded data.

we could note that Enríquez-Ominami and Artes were the only two candidates who did not declare to have invested in campaign ads in digital media (Servicio Electoral de Chile, 2018). It is very unlikely that the number of comments is organically so superior to that obtained by the center-right candidate who won the election, Sebastián Piñera, who in addition invested the largest amount of resources in digital media advertising: 40% of the total. He is followed by Goic, who spent 39%, Kast, with 16%, Guillier, 4%, Navarro, 3%, and Sánchez, 2% of the total amount spent overall by all candidates (Servicio Electoral de Chile, 2018). Therefore, we can assume that they used interaction automation strategies or hired services non informed to the electoral service.

To corroborate the previous reflection on the automation of comments on Facebook, we analyzed the possible existence of communities in the comments. In this methodology, communities refer to user groups that could be acting in coordination to post similar messages in the comments of a candidate or different candidates or interacting in the same way in specific content (liking, denouncing or reproducing content). To create the communities, we did not use the candidates as a base, but rather the nodes of users commenting. Communities were evaluated using the Louvain method for community detection (Blondel, Guillaume, Lambiotte, & Lefebvre, 2008), included in the Neo4J package. When executing it, there is no clear community, i.e., there is no coordination between users to post comments on a specific post.

Since no results were obtained at the community level, we proceeded to analyze the 20 users who commented the most in the entire sample obtained with our program, always with the aim of trying to understand the performance of those users who most want to influence the discussion. Although we observe that during the entire period of the first presidential round there were users who commented much more than the rest, when analyzing the content of the comments and their post-election behavior, still valid and commenting regularly, it follows that they are no automated accounts. Of the cases analyzed, a user commented 985 times in the publications of Sebastián Piñera and Alejandro Guillier (even more than one comment per publication in some cases, since the sum of publications of both candidates is only 604 publications); another user commented 448 times in the publications of Alejandro Guillier, José Antonio Kast and Sebastián Piñera; four users commented between 200 and 300 times each, and 14 commented more than 140 times, but less than 200. It is important to note that, of the 20 users, only four post in the accounts of a single candidate. All others comment on publications of two or more candidates, so it is assumed that they are not only support messages but also of criticism or dialogue with the other candidates.

Considering the above, regarding Facebook, we did not find evidence of abnormal behavior based on automated strategies; however, the active participation of certain users who comment much more than others

in the publications of various candidates is evident. At this stage of the investigation, we did not conduct a content analysis of the texts of the comments, so we cannot know their intentionality.

DISCUSSION AND CONCLUSIONS

The discussion and exchange of political opinions among citizens prior to a general election is not only a right, it is also a desirable practice for citizens to be informed and to make appropriate decisions when choosing their representatives. However, if the discussion or exchange is mediated or interfered with by computer software that creates false consensus or attacks opponents, there is a malicious distortion of this expected debate (Bennett & Livingston, 2018; Bradshaw & Howard, 2018; Persily, 2017). This research sought to identify whether or not there were automated or semi-automated strategies for creating or disseminating content in social media discussions/conversations about the 2017 Chilean presidential elections.

As a general conclusion, it can be said that there is no evidence that the presidential election debate in Chile was co-opted or kidnapped by cyber-troops, i.e., there were no large groups of individuals mandated by political parties, presidential candidates or by the government whose objective was to distort the conversation. However, we did find some networks of informative bots and a botnet of a local deputy campaign, which in turn generated content for one of the presidential candidacies.

Regarding information networks, we discovered government and press automated information networks. For example, those government agencies that invited to vote, or gave information regarding the elections, so even though they are bots, they are legitimate or beneficial according to the categories of bots' types explained by Bradshaw and Howard (2018). As exemplified in the results section, their content was informative and useful in the context of an election.

Other actors that also occupy automation for message delivery are the media. Journalism has traditionally played a role in shaping public discourse, and the use of these tools seems legitimate as long as they are guided by the rules of the profession. The news bots' networks we found are not programmed by large media conglomerates; as mentioned in the results, only two of the tweets were generated by a mainstream national newspaper and their content was informative, regarding the election. The other contents were programmed by community radios that deliver informative and non-proselytizing content. Therefore, it can be presumed that these bots were programmed to increase the reach of their contents or to their perceived audience, such as other astroturfing strategies mentioned in of Howard et al.'s characterization (2018). It would be interesting to know in future research the motivations of these actors to occupy bots, since it is not clear if they do so as a way to increase their audience, advertisers, deceive the algorithm of visualization of their contents or for some other reason.

Even if we did not detect large volumes of manipulation at the level of political organizations on Twitter, it is possible to recognize botnets associated with a deputy candidate in the first round, which in turn generated proselytizing content for one of the presidential candidates. These bot networks were self-contained and had no digital connections with the aforementioned presidential candidate. This network tweeted the same content up to 48 times instantly. According to the authors of this work, and based on the literature reviewed, this could not be considered a cyber-troop, as there seems to be no link with the official campaign or the political party. They are a pair of self-contained networks without connections to the pages or other accounts of the official campaign of the presidential candidate.

This would be a new type of political communication phenomenon, which seems to be the automation of contents of a local campaign that can be linked to a specific presidential candidacy. It is a kind of citizen entrepreneurship that tries to show a higher level of support than the candidate has, such as an astroturfing or false supports generation strategy.

In the case of Facebook, although there is no evidence of automation or false accounts commenting or interacting with the candidates' publications in their campaign profiles, we did identify the active participation of specific users who comment significantly more than the rest, even several times a day, in the publications of various candidates. As we have seen, commercial social media platforms have become a very relevant space for political discussion; in the Chilean elections, both the number of Facebook publications of the candidates, more than 2900, and the number of comments, more than 450,000, reflect this tendency of the candidates to use commercial platforms as an electoral strategy, something in line with the international experience (Persily, 2017; Braga & Charlemagne, 218). However, as discussed below, in the new networked public sphere, the participation of

a few individuals who actively participate could have effects on the entire network, especially when they have the time or technical skills to do so. Thus, a few individuals could have a great influence on the overall discussion (Bennett et al., 2018).

We consider that the evidence found regarding the bots of a local candidacy, and the actions of a group of individuals who comment massively, although not in an automated or coordinated manner, in the Facebook publications of candidates would correspond to similar dynamics of political behavior in the networked public sphere. The generators of these contents and strategies behave as voluntary brigades of digital propaganda. Brigades that act autonomously, and even perhaps without knowledge from the core of the presidential campaign organization or mandate from the party (we found no evidence of reciprocity or even links from with the party or candidates). However, they are interested, individually or in groups, in manufacturing the perception of consensus and false support towards their preferred candidate, as do cyber-troops, although without the explicit mandate of the government or the party or the technical support to do it massively.

While these dynamics are not massive, in terms of the number of bots and their possible reach, the attempt to manipulate public opinion exists, and it is necessary to take it into consideration, since other authors have shown how the strength of peripheral actors, in terms of the centrality of a network, can become crucial in its own circles and thus increase the reach and impact of the messages, reaching extreme places compared to the central network. "It is not always the core actors that dominate the outcomes. Peripheral networks may play a significant role in the networked framing process, particularly at the blurring interface of social and legacy media" (Bennett et al., 2018, p. 68). Distant audiences can be captured by peripheral actors with important effects on public attention and framing (Bennett et al., 2018). These propaganda brigades could, in future elections, move important messages back to the center of the network causing unexpected results.

It is important to recognize that the meaning of certain periods or events is not imposed by traditional media or by activists or stakeholders; it is rather the result of "complex networked processes of negotiating and focusing ocietal attention" (Bennett et al., 2018, p. 3) in which the peripheries of the network may have an important role.

Previous research in other countries reported major attempts at manipulating public opinion through propaganda produced by foreign governments, political parties or governments. In the case studied in our work, it seems that it is individuals who try to generate these ideas of false consensus from a political venture not linked to the political institutions themselves; this opens the debate on whether it is legitimate or not, as part of the freedom of expression, to use these automation tools to move particular political interests through the distortion of audience perception.

In future research, we intend to analyze qualitatively the types of content generated in these campaigns and other dynamics of meaning creation and message exchanges. The multimedia ecology of the hybrid public sphere is an immense field for the study of policies and political processes.

NOTES

1. List of accounts and hashtags used to collect Twitter conversations: #EleccionesChile; #FranjaElectoral; #elecciones2017; #Franjaelectoral2017; #Servel; @carolinagoic ; #YoMeAtrevo; #GoicPresidenta; #Vota1; #Votagoic; @joseantoniokast; #kastPresidente; #Kast; #Kast2davuelta; #familiamilitarconkast; @SebastianPinera; #PiñeraPresidente; #Piñera; #TiemposMejores; #Vota3; @guillier; #ElPresidenteDeLaGente; #Guillier; #guillierpresidente; #guillierdaconfianza; @labeasanchez; #BeatrizPresidenta: #Vota5; #FrenteAmplio; #BeatrizSanchez; @marcoporchile; #ChileDeLosLibres; #PresidenteMarco; #Yomarco6; #MEO; @eduardo_artes; #yoestoyconartés; #UnionPatriotica; #EduardoArtes; #ArtesPresidente; @navarrobrain; #LaFuerzaDeLaGente; #Navarropresidente; #Vota8; #EnPrimeraConNavarro.

2. Sence is the National Training and Employment Service, a technical agency of the Chilean State.

3. These examples are not included in the references, since they are no longer available on the Internet; however, they are within the sample analyzed for this investigation. They are presented here to exemplify the style of the contents, but do not provide a reference to the direct cite, which no longer exists.

4. This example is not included in the reference list, for the same reasons explained above.

REFERENCIAS

About suspended accounts. (n.d.). *Twitter*. Retrieved from https://help.twitter.com/en/managing-your-account/suspended-twitter-accounts

Allcott, H. & Gentzkow, M. (2017). Social Media and Fake News in the 2016 Election. *Journal of Economic Perspectives*, *31*(2), 211-236. Retrieved from https://www.aeaweb.org/articles?id=10.1257/jep.31.2.211

Arnaudo, D. (2017). *Computational Propaganda in Brazil: Social Bots During Elections*. Working Paper No. 2017.8. Oxford: Project on Computational Propaganda. Retrieved from https://blogs.oii.ox.ac.uk/politicalbots/wp-content/uploads/sites/89/2017/06/Comprop-Brazil-1.pdf

Arroba Rimassa, J., Llopis, F., Muñoz, R., & Gutiérrez, Y. (2018). *Using the Twitter social network as a predictor in the political decision*. Paper presented at CICLing 2018, 19th International Conference on Computational Linguistics and Intelligent Text Processing, Hanoi, Vietnam. Retrieved from http://hdl.handle.net/10045/76464

Bakshy, E., Messing, S., & Adamic, L. A. (2015). Exposure to ideologically diverse news and opinion on Facebook. *Science*, *348*(6239), 1130-1132. https://doi.org/10.1126/science.aaa1160

Benkler, Y. (2006). *The wealth of networks: How social production transforms markets and freedom*. New Haven: Yale University Press.

Bennett, W. L. & Livingston, S. (2018). The disinformation order: Disruptive communication and the decline of democratic institutions. *European Journal of Communication*, *33*(2), 122-139. https://doi.org/10.1177/0267323118760317

Bennett, W. L., Segerberg, A., & Yang, Y. (2018). The Strength of Peripheral Networks: Negotiating Attention and Meaning in Complex Media Ecologies. *Journal of Communication*, *68*(4), 659-684. https://doi.org/10.1093/joc/jqy032

Blondel, V., Guillaume, J., Lambiotte, R., & Lefebvre, E.(2008). Fast unfolding of communities in large networks. *Journal of Statistical Mechanics: Theory and Experiment*, *2008*(10). https://doi.org/10.1088/1742-5468/2008/10/P10008

Bond, R. & Messing, S. (2015). Quantifying Social Media's Political Space: Estimating Ideology from Publicly Revealed Preferences on Facebook. *American Political Science Review*, *109*(1), 62-78. https://doi.org/10.1017/S0003055414000525

Bradshaw, S. & Howard, P. N. (2017). *Troops, Trolls and Troublemakers: A Global Inventory of Organized Social Media Manipulation*. Oxford Internet Institute. Retrieved from https://ora.ox.ac.uk/objects/uuid:cef7e8d9-27bf-4ea5-9fd6-855209b3e1f6

Bradshaw, S. & Howard, P. N. (2018). *Challenging Truth and Trust: A Global Inventory of Organized Social Media Manipulation*. Oxford Internet Institute. Retrieved from http://comprop.oii.ox.ac.uk/wp-content/uploads/sites/93/2018/07/ct2018.pdf

Braga, S. & Carlomagno, M. (2018). Eleições como de costume? Uma análise longitudinal das mudanças provocadas nas campanhas eleitorais brasileiras pelas tecnologias digitais (1998-2016) (Elections as usual? longitudinal analysis of the changes caused by digital technologies in Brazilian electoral campaigns (1998-2016)). *Revista Brasileira de Ciência Política,* (26), 7-62. https://doi.org/10.1590/0103-335220182601

Chadwick, A. (2013). *The hybrid media system: politics and power.* Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199759477.001.0001

Filer, T. & Fredheim, R. (2017). Popular with the Robots: Accusation and Automation in the Argentine Presidential Elections, 2015. *International Journal of Politics, Culture, and Society*, *30*(3), 259-274. https://doi.org/10.1007/s10767-016-9233-7

Forelle, M., Howard, P. N., Monroy-Hernandez, A., & Savage, S. (2015). Political Bots and the Manipulation of Public Opinion in Venezuela. *arXiv preprint arXiv:1507.07109*. Retrieved from https://arxiv.org/abs/1507.07109

Gallacher, J. D., Kaminska, M., Kollanyi, B., & Howard, P. N. (2017). *Junk News and Bots during the 2017 UK General Election: What Are UK Voters Sharing Over Twitter?* Technical report, Data Memo 2017.5. Project on Computational Propaganda, Oxford. Retrieved from https://blogs.oii.ox.ac.uk/wp-content/uploads/sites/89/2017/06/Junk-News-and-Bots-during-the-2017-UK-General-Election.pdf

Glowacki, M., Narayanan, V., Maynard, S., Hirsch, G., Kollanyi, B., Neudert, L., … & Barash, V. (2018, June 29). News and Political Information Consumption in Mexico: Mapping the 2018 Mexican Presidential Election on Twitter and Facebook. *The Computational Propaganda Project*. Retrieved from http://comprop.oii.ox.ac.uk/research/working-papers/mexico2018/

Habermas, J. (2006). Political Communication in Media Society: Does Democracy Still Enjoy an Epistemic Dimension? The Impact of Normative Theory on Empirical Research. *Communication Theory*, *16*(4), 411-426. https://doi.org/10.1111/j.1468-2885.2006.00280.x

Howard, P. N. (2015). *Pax Technica: How the Internet of Things May Set Us Free or Lock Us Up*. New Haven: Yale University Press.

Howard, P. N., Savage, S., Flores Saviaga, C., Toxtli, C., & Monroy-Hernandez, A. (2017). Social Media, Civic Engagement, and the Slacktivism Hypothesis: Lessons From Mexico's "El Bronco". *Journal of International Affairs*, *70*(1), 55-73. Retrieved from https://www.jstor.org/stable/90012597

Howard, P. N., Woolley, S., & Calo, R. (2018). Algorithms, bots, and political communication in the US 2016 election: The challenge of automated political communication for election law and administration. *Journal of Information Technology & Politics*, *15*(2), 81-93. https://doi.org/10.1080/19331681.2018.1448735

Hurlock, J. & Wilson, M. L. (2011, July). Searching Twitter: Separating the Tweet from the Chaff. In *Fifth International AAAI Conference on Weblogs and Social Media* (pp. 161-168). AAAI Publications. Retrieved from https://www.aaai.org/ocs/index.php/ICWSM/ICWSM11/paper/viewPaper/2819

Hwang, T. (2017). Dealing with Disinformation: Evaluating the Case for CDA 230 Amendment (SSRN Scholarly Paper Nº ID 3089442). Retrieved from Social Science Research Network website: https://papers.ssrn.com/abstract=3089442

La Tercera. (2017a, November 16). #EleccionesLT ¿Cómo funcionará la Ley Seca el día de las votaciones? Acá te lo explicamos #EleccionesChile (#EleccionesLT How will alcohol prohibition work on voting day? We explain it to you #EleccionesChile) (Twitter post). Retrieved from https://twitter.com/latercera/status/931372075465433088

La Tercera. (2017b, November 14). #EleccionesLT | ¿Vas a votar y no sabes hasta qué hora puedes hacerlo? Acá te contamos #EleccionesChile (#EleccionesLT | You are going to vote and do not know until what time can you do it? We tell you! #EleccionesChile) (Twitter post). Retrieved from https://twitter.com/latercera/status/930408641575948288

Noble. (2018). *Algorithms of oppression: how search engines reinforce racism*. New York: New York University Press.

Noelle-Neumann, E. (1984). *The spiral of silence: public opinion, our social skin*. Chicago: University of Chicago Press.

Papacharissi, Z. (2010). *A Private Sphere: Democracy in a Digital Age*. Malden: Polity Press.

Pariser, E. (2012). *The Filter Bubble: How the New Personalized Web is Changing what We Read and how We Think*. London: Penguin Books.

Persily, N. (2017). The 2016 U.S. Election: Can Democracy Survive the Internet? *Journal of Democracy*, *28*(2), 64-76. https://doi.org/10.1353/jod.2017.0025

Puyosa, I. (2017). Bots políticos en Twitter en la campaña presidencial #Ecuador2017 (Political Bots on Twitter in #Ecuador2017 Presidential Campaigns). *Contratexto*, (027), 39-60. https://doi.org/10.26439/contratexto.2017.027.002

Saa, M. (2017, November 13). Carolina Goic a la presidencia! Y en el distrito 10 Nicolás Muñoz debe ser diputado! Hagamos las cosas bien con ética y responsabilidad #GanemosConGoic #YoMeAtrevo #PorLoJusto (Carolina Goic for president! And in the 10th district, Nicolás Muñoz must be a deputy! Let's do things well with ethics and responsibility #GanemosConGoic #YoMeAtrevo #PorLoJusto) (Twitter post). Retrieved from https://twitter.com/ManuelSaa5/status/930162386434174977

Santana, L. E. (2015). *From the Village to the Global Village: An Alternative Model of Collective Action in Digital Media Networks* (Doctoral dissertation). Retrieved from https://digital.lib.washington.edu/researchworks/handle/1773/33130

Savage, S. & Monroy-Hernández, A. (2015). Participatory Militias: An Analysis of an Armed Movement's Online Audience. In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing - CSCW '15* (pp. 724-733). New York: ACM. https://doi.org/10.1145/2675133.2675295

Sence Chile. (2017, November 5). Participar en las #Elecciones2017 es la única manera de hacer valer tu opinión. ¡No te restes, súmate! (Participating in #Elecciones2017 is the only way to assert your opinion. Don't stay apart, come on!) (Twitter post). Retrieved from https://twitter.com/SenceChile/status/927289421115936770

Servicio Electoral de Chile. (2017). *Manual de Consulta de Campaña y Propaganda Electoral 2017* (Campaign and Electoral Propaganda 2017 Handbook) (PDF file). Retrieved from https://www.servel.cl/wp-content/uploads/2017/08/Manual_de_Propaganda_Electoral_21-08-2017.pdf

Servicio Electoral de Chile. (2018). Ingresos y gastos de candidatos (Candidate's earnings and spending). Retrieved from https://www.servel.cl/ingresos-y-gastos-de-candidatos/

Tufekci, Z. (2016). As the pirates become CEOs: The closing of the open internet. *Daedalus*, *145*(1), 65-78. https://doi.org/10.1162/DAED_a_00366

Valenzuela, S., Arriagada, A., Somma, N., & Scherman, A. (2016). Social Media in Latin America: Deepening or Bridging Gaps in Protest Participation? *Online Information Review*, *40*(5), 695-711. https://doi.org/10.1108/OIR-11-2015-0347

Valenzuela, S., Piña, M., & Ramírez, J. (2017). Behavioral Effects of Framing on Social Media Users: How Conflict, Economic, Human Interest, and Morality Frames Drive News Sharing. *Journal of Communication*, *67*(5), 803-826. https://doi.org/10.1111/jcom.12325

Vosoughi, S., Roy, D., & Aral, S. (2018). The spread of true and false news online. *Science*, *359*(6380), 1146-1151. https://doi.org/10.1126/science.aap9559

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