GLOBAL AMERICANS

MEASURING THE IMPACT OF MISINFORMATION, DISINFORMATION, AND PROPAGANDA IN LATIN AMERICA

Identifying Sources, Patterns, and Networks Propagating Foreign Disinformation Campaigns

Edited, organized, and synthesized by **Global Americans**

A project in partnership with:

CADAL   Medianálisis COMUNICACIÓN PARA LA DEMOCRACIA   Tecnológico de Monterrey   Universidad del Rosario

Our Project Partners

Global Americans

Global Americans is a Washington, D.C.-based think tank that specializes in providing smart news and research about Latin America and the Caribbean, written and packaged for policy impact and popular debate. Through an extensive network of scholars, journalists, and activists, Global Americans produces analysis on democracy, human rights, climate change, social inclusion, and foreign policy. Global Americans leads diverse research projects designed to provide policymakers with the tools needed to promote positive change and to build more prosperous democracies in the Americas. Past research projects have included a Working Group on Inter-American Relations, a series on the future of U.S.-Colombia relations, a series on the future of U.S.-Ecuador relations, and a project on good governance in the Caribbean, among many others. In addition to publishing articles and reports, Global Americans is committed to convening experts and policymakers through public conferences, roundtable discussions, seminars, and events in the United States and across the hemisphere.

Members of Global Americans involved in the project:
Guy D. Mentel
Andres Chong-Qui Torres
Henry Bacha
Scott B. MacDonald
Ezequiel Carman
Robert Carlson
Benjamin Henderson

Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM)

ITESM is a Monterrey, Mexico-based university with satellite campuses throughout Mexico and Central America. Often referred to as the Massachusetts Institute of Technology (MIT) of Mexico, the university specializes in engineering, science, computer science, and increasingly, policymaking and political science, with a specific orientation toward quantitative methods and analysis. ITESM is unique in its academic and policy profile in Mexico. One of its cross-disciplinary projects is its Entrepreneurship and Transformation Lab—which has supported high social impact initiatives in more than 42 countries. The lab has developed an algorithm and tracking tool to monitor social media by detecting, tracing, and analyzing messages that are likely coordinated by non-personal sources (bots) and are designed to spread misinformation and discord.

Members of ITESM involved in the project:
Joanna Alvarado
Edgar Barroso
Héctor Ceballos

Ángeles Estrada
Marco Antonio Fernández
Juan Carlos Garfias
Gerardo Ortiz
Roberto Ponce
Adan Silverio
Rolando Treviño
Eduardo Villalpando
Óscar Díaz

Centro para la Apertura y Desarrollo en América Latina (CADAL)

CADAL is a Buenos Aires-based think tank that has conducted a number of studies on Russian-state media. CADAL is one of the preeminent organizations working on the issue of "sharp power," and they have done extensive work on this topic across the Southern Cone (Argentina, Brazil, Chile, Paraguay, and Uruguay). Under a multi-year National Endowment for Democracy project, CADAL has also led a regional network of NGOs and universities in conducting research on democracy and human rights.

Members of CADAL involved in the project:
Juan Pablo Cardenal
Gabriel Salvia
Verónica Repond
Carmen Grau Vila

Medianálisis

A Venezuela-based nonprofit, Medianálisis was created by leading independent journalists and communications professors. One of its founders, Andrés Cañizález, helped create the Instituto de Prensa y Sociedad (IPYS) in Venezuela, the first Venezuela-based network of journalists dedicated to defending freedom of expression and the lives of journalists. The non-profit is dedicated specifically to detecting, tracing, and reporting on misinformation and disinformation from foreign and domestic sources in Venezuela. It is the only organization of its kind operating in the very difficult environment in Venezuela today.

Members of Medianálisis involved in the project:
Ingrid Jiménez
Rodolfo Rico
Ana Julia Niño
Andrés Ramos
Nicel Seoane
Andrés Cañizález

Universidad del Rosario

A Bogotá-based university, the Universidad del Rosario is one of the leading universities in Colombia with programs in political science, international relations, and communications. The university boasts an extensive network of journalists and academics, and it has led investigations on corruption and illicit markets. Universidad del Rosario has particular influence in Colombia and is home to an interdisciplinary team that has worked on many of the issues central to this project.

Members of Universidad del Rosario involved in the project:
Arlene Beth Tickner
Andrés Arturo Peña Galindo
Gustavo Rivero
Luisa Osorio

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Executive Summary: Measuring the Impact of Misinformation, Disinformation, and Propaganda in Latin America

Today, new forms of political influence, often wielded through state-sponsored media disinformation campaigns, are a part of a strategy by non-democratic regimes. For external actors, these media sources and their activities reflect a long-term strategy to broaden geo-strategic and even territorial goals by building allies, undermining United States and Western influence, and recasting the international order in favor of non-democratic states. Though Latin America and the Caribbean are often overlooked in discussions on the phenomenon, in the past decade, foreign state media have assumed a greater role in the Western Hemisphere's media landscape, both directly and indirectly. Indeed, state media companies from non-democratic states are investing heavily to increase their global presence, including in local language media sites, YouTube channels, news bureaus, and on social media. In many cases, a central goal of these efforts is to influence public perception of these non-democratic states and their policies, and to tilt local media coverage and sow disinformation and discord. Countering this near-and long-term threat to democratic norms, public consensus and discourse, and values of transparency, civility, tolerance, open markets and political systems, and human rights requires first understanding the sources, methods, targets, and themes of these state-based propaganda and disinformation campaigns.

Driven by fundamental research questions that remain largely unaddressed in the current literature—how is misinformation, disinformation, and propaganda disseminated in Latin America by foreign state media sources and consumed by Latin American audiences, and what are the regional policy implications of such consumption?—we have sought to gain a comparative, region-wide perspective on disinformation and its impact on Latin America and the Caribbean. To this end, Global Americans formed a cross-regional network to thoroughly detect, monitor, and evaluate foreign state media and the way in which these actors and their agents produce and spread misinformation, disinformation, and propaganda.

Working with four local counterpart organizations—Centro para la Apertura y Desarrollo de América Latina (CADAL), Medianálisis, Universidad del Rosario and Escuela de Gobierno y Transformación Pública Tecnológico de Monterrey—this project team has spent nearly 16 months identifying and reporting on the social media agents engaged in disinformation, and monitoring their efforts to influence civil society, the media, and policymakers in Latin America in order to develop an understanding of these external actors' tactics and intentions. Using the COVID-19 pandemic as one thematic vehicle through which one might understand the network of actors at play and the way in which these actors deploy their preferred tactics, Global Americans and our project partners have carefully monitored, categorized, and analyzed traditional (e.g., newspapers, television, and radio outlets) and non-traditional (e.g., social media) media sources throughout the hemisphere.

While the disinformation landscape varies throughout the hemisphere, there are similarities that transcend national borders, the primary of which is a sustained effort by non-democratic governments—like China and Russia, and to a lesser extent, Cuba, Venezuela, and Iran—to seize control of major domestic and regional sociopolitical and economic trends and bend them in favor of their own geopolitical agenda. Each of our project partners has conducted rigorous quantitative and qualitative research, covering Argentina, Chile, Peru, Colombia, Mexico, and Venezuela. In the context of the COVID-19 pandemic, our teams have analyzed disinformation and misinformation trends as they relate to the dissemination of intentional or unintentional erroneous information, propaganda praising the actions of governments in their handling of the COVID-19 pandemic, and criticism levied against those governments' shortcomings.

Our research also includes an examination of the use of "sharp power" in Argentina, Chile, Colombia, and Peru. The term "sharp power" is broadly defined as a new phenomenon that is often used by non-democratic regimes seeking to attract, distract, and manipulate audiences in democratic countries through their communications outlets, cultural centers, and global learning institutes. Sharp power effectively creates a positive image of the regime via targeted messaging at the international level and influence exertion at the national level. It can result in political divisions and manipulate audiences by stirring up controversy within society or with other countries. This sort of interference is also referred to as information operations, which consist of disinformation campaigns, often orchestrated by media affiliated with these countries. Moreover, many state-owned media companies from China, Russia, and other countries lack transparency, an aspect of their communications strategy meant to help camouflage the full range of their activities.

Over the course of this study, our teams have evaluated misleading and propagandistic media stories in English, Spanish, and Portuguese, which has allowed Global Americans and our partners to identify the modalities and source of international and domestic disinformation campaigns throughout Latin America. We have covered the extent, nature, and objectives of foreign state-media disinformation campaigns, the targets of those efforts across population sub-groups and across select topics of choice. We have thoroughly studied the social media landscape to determine the affiliated but undeclared partners of foreign state media, uncovering patterns and networks across the hemisphere to understand how coverage is being picked up and spread wittingly and unwittingly.

Our cross-regional research project revealed the following high-level findings:

▪ China, Russia, and other undemocratic actors are active in promoting disinformation and propaganda in Latin America through their state-sponsored media channels, though the degree and scope of these efforts vary from country-to-country. The most active of these are Russia Today (RT), Telesur, Sputnik Mundo, and Xinhua Español; Twitter and Facebook are actively used in the social media sphere.

▪ Chinese and Russian misinformation, disinformation, and propaganda are disproportionately concentrated on thematic targets that lie at the intersection of democratic fault lines, inflaming local political rifts, promoting like-minded and often non-democratic local forces, and portraying China and Russia as benevolent partners and alternatives to the United States throughout the region.

- While Chinese and Russian government disinformation operations are often similar, there are key differences. Russia lacks the means to properly court deeper commercial opportunities and its disinformation strategy is focused on disrupting social order and political stability at a national level, as seen in Colombia and Chile, two known U.S. allies. Russia also seeks to gain new friends that are preferably disinclined to the U.S. in the hope of expanding their political influence. In contrast, China is the world's second largest economy, a major trading partner throughout the region, and an important foreign investor. While the Russian government generally attempts to disrupt, the Chinese government's disinformation strategy tries to position China as the new benevolent hegemon and the dominant international power in the current international system.

- While Mexico lies at one end of the disinformation paradigm, with propaganda from foreign state media considerably less intense and much more engaged in the cultural activism space, Venezuela lies at the other the end of the disinformation extreme, home to overt and direct disinformation from China, Russia, and the Venezuelan authorities themselves, all undermining democratic forces in the country.

- In Mexico, the TEC team found that the main disseminators of authentic news were traditional media outlets, while disinformation and misinformation came from local media or users with a high degree of negativity and polarization, as measured by the project's novel sentiment analysis tool. The TEC team also found that the federal government's handling of the pandemic proved to be a particularly volatile and polarizing battleground of narratives, making up about 10 percent of all Twitter posts studied (a total of 217,462 Twitter posts), of which 3.5 percent were in favor of the government's handling of the pandemic while 6.5 percent opposed it.

- Research on Peru revealed that Chinese state media is the most active in the Andean country, likely due to Peru's wealth of mineral resources and oil, and the existence of a relatively sizable community of Chinese descent. Chinese influence is most felt through the local media, academic circles, and government officials, many of whom have visited China. Research points to Chinese government messaging centered on painting a positive picture of China's achievements in reducing poverty and effectively fighting COVID-19, while helping Peru with medical care and supplies. In contrast, among foreign state media efforts in Peru, Russian engagement is far less a factor, particularly compared to Russian engagement in other Latin American countries, such as Colombia, Venezuela, and Argentina.

- Research indicates considerable Russian and Chinese engagement in Argentina in the media and information space. For China, Argentina is a significant source of key commodities, including soybeans, meat, and seafood, while for Russia, the Argentine government's lukewarm relationship with the U.S. is of keen interest, as it allows Moscow to cast its influence outside of its traditional spheres of influence in the Middle East and Eastern Europe. Research found that Chinese efforts largely centered around promoting the Chinese economic model and narratives of solidarity, while Russian propaganda was particularly active in positively portraying its vaccine, Sputnik V, with its disinformation operations seeking to tarnish American and European vaccines.

▪   Research on Colombia revealed the presence of foreign state media but to varying degrees. The study looked at 86,615 Twitter posts published in Spanish by nine news agencies between September 1, 2019, through September 30, 2020; a total of 1,464 profiles were manually reviewed to report on the disinformation process, including the creation, production, and dissemination of messages, and found that 184 accounts spread posts created by Chinese media outlets, including alleged cyborgs (18) mainly located in Venezuela, Argentina, Colombia, and Uruguay and highly suspicious users (3) located in Venezuela (2) and Mexico (1); 247 accounts propagated information created by Russian media outlets, including alleged cyborgs (40) and highly suspicious users (10) mainly located in Colombia; and 225 accounts propagated information created by Cuban and Venezuelan media outlets, including cyborgs (18) located in Venezuela, Colombia, and Cuba, as well as highly suspicious users (10) located in Colombia.

▪   Chinese messaging in Colombia centers on its role as an important trade partner and therefore the narrative projected is one of mutually beneficial partnership between the two countries. In contrast, Russian state media in Colombia has engaged most actively during moments of social discontent, with that messaging largely centered around anti-government talking points.

▪   Colombia's role as a U.S. ally has made its way into Russian messaging. Our research indicates that Venezuelan political actors have also engaged in aggressive misinformation efforts against the Colombian government, due in part to Bogotá's willingness to host large numbers of Venezuelan refugees and members of the Venezuelan opposition.

Our findings underscore the importance of better understanding foreign state-media, their activities, their counterparts, their preferred themes, and their preferred tactics in Latin America and the Caribbean. Moreover, these findings reaffirm the critical significance of better informed and prepared journalists, civil society actors, academics, and policymakers, so that these actors can better detect and counteract non-democratic foreign state media campaigns. Investing in promoting a more politically conscious citizenry in the hemisphere that is more understanding—and even skeptical—of non-democratic state media and their activities and tactics is of utmost importance. Public debate is vital and needs to be well-informed and fact checked. The price for non-engagement and apathy toward disinformation networks is too high and not confronting this challenge risks perpetuating ongoing anti-democratic trends and further eroding democratic institutions in the Western Hemisphere.

As part of this project, Global Americans successfully organized a seminar with leading reporters, academics, thought leaders, civil society members, and influencers across Latin America to engage the region as we seek to mitigate the pernicious effects of disinformation and propaganda. Central to these efforts is effective knowledge-sharing, fact-checking, education, and monitoring of both traditional and social media platforms. The waves created by these partnerships, seminars, and summits are promising and set forth a clear path for effective collaboration in defense of democratic values in the Americas.

Ultimately, this study—through a primary but not exclusive focus on disinformation and misinformation in the context of the COVID-19 pandemic—has gleaned significant insights as to the geopolitical motivations and strategies deployed by non-democratic regimes—whether headed by Vladimir Putin, Nicolás Maduro, or Xi Jinping—in a region that in recent decades has emerged as an ideological battleground between Western-style, free-market liberal democracy and statist autocracy. Understanding how misinformation and disinformation spreads and the context under which malign actors operate to sow discord and misinform our communities is critical to developing a plan of action to mitigate its deadly consequences. Similarly, understanding how malign foreign powers seek to take advantage of local vulnerability—political, economic, diplomatic, or epidemiological—in the furtherance of their own geopolitical objectives, can help nations save lives and strengthen their public policy responses when facing major crises that are made worse by disinformation. On behalf of Global Americans and our project partners, we hope that our project will serve as an early lodestar for understanding how to identify, mitigate, and counteract disinformation throughout Latin America, the Caribbean, and the entirety of the Western Hemisphere.

Glossary

1. **Information:** Knowledge obtained from investigation, study, or instruction. The communication or reception of knowledge or intelligence.

2. **Misinformation:** The inadvertent sharing of false information without knowing intent.

3. **Disinformation:** The deliberate dissemination of inaccurate information that seeks to undermine public confidence, distort facts, and convey a certain way of perceiving reality, especially designed to exploit social and political vulnerabilities to destabilize democratic societies.

4. **Propaganda:** Information presented in a certain way to influence audiences and manipulate public opinion, regardless of the veracity of the facts stated.

5. **Application Programming Interface (API):** An interface that allows two programs to communicate with each other using an established protocol.

6. **Authenticity:** The degree to which a publication (or post, in the case of social media) is fact-based.

7. **Bidirectional Encoder Representations from Transformers (BERT):** A language representation model designed to pre-train deep bidirectional representations from an unlabeled text.

8. **Bots:** Inorganic accounts (managed through an algorithm, not by people) that seek to replicate human interaction to promote propaganda, disinformation, or promote a specific product or commercial interest.

9. **Intent:** The degree to which the creator of the post or publication seeks to deceive their audience.

10. **Latent Dirichlet Allocation (LDA):** A statistical model that enables the user to discover abstract themes, a process also known as theme modeling.

11. **Object-Oriented Programming (OOP):** A programming paradigm based on objects that abstracts complexity by bringing together data and procedures in the same entity and helps to establish connections between them.

12. **Query:** Refers to the search terms that are used in the Twitter API for the collection of tweets.

13. **Relational Database (RDB):** A type of database that stores data in tables that are related through a unique identifier (key).

14. **Interquartile Range (IQR):** In sentiment analysis, this criterion helps to determine which values in a sample can be considered within a "normal" range and those that can be considered outliers.

15. **K-core:** An algorithm that enables the filtering of nodes by the level of connections within the network.

16. **#LigaDeGuerreros / #OposiciónUnida / #RxM:** Equal to #RedAMLO, anti-government accounts in Mexico use these hashtags in the content of their tweets, account descriptions, and account names. The hashtag #RxM refers to the coalition opposing the government, *Va por México* (an *ad hoc* alliance, created by the Institutional Revolutionary Party (*Partido Revolucionario Institucional*, PRI), National Action Party (*Partido Acción Nacional*, PAN), and Party of the Democratic Revolution (*Partido de la Revolución Democrática*, PRD), to oppose President Andrés Manuel López Obrador's National Regeneration Movement (*Movimiento Regeneración Nacional*, MORENA) party.

17. **Modularity:** A measure of network structure designed to measure the strength of the division of a network into modules, also known as community detection.

18. **Precision:** The ratio TP / (TP + FP), where TP is the number of true positives and FP is the number of false positives. Precision is, intuitively, the ability of the classifier to avoid labeling a negative sample as being positive (and vice versa).

19. **F1 Score:** A weighted average of accuracy and recall; an F1 score is highest (best) at 1 and lowest (worst) at zero.

20. **Recall:** The ratio TP / (TP + FN), where TP is the number of true positives and FN is the number of false negatives. Recall is, intuitively, the ability of the classifier to detect all positive samples.

21. **#RedAMLO:** A hashtag used by accounts that support the government of President López Obrador, found either in the text of the tweets that they publish or in the description of their accounts.

22. **Word embedding:** A process that enables the user to create a representation of each word, using another word in the sentence as a vector.

23. **Trolls:** Unlike bots, social media trolls are people (not algorithms) who seek to generate conflict, deepen polarization, and promote an environment of constant division on social networks. If they are paid for their efforts, it would be a funded strategy (by domestic or foreign actors, and from the public or the private sector).

24. **Coordinated Inauthentic Behavior (CIB):** Also known as "coordinated inorganic activity," coordinated inauthentic behavior refers to groups of websites, humans, or bots working together in an attempt to influence or manipulate online

conversations by strategically posting or reproducing premeditated messages at specific times.[12]

25. **Cyber-Troops:** Online actors, usually working at the behest of a government or political party—but which may also be linked to private industries, civil society organizations, internet subcultures, hacker collectives, social media influencers, amateur political activists, etc.—that seek to manipulate online public opinion through the dissemination of disinformation.[3]

26. **Bubble Filters:** Algorithms that select and provide information to users while considering their previous interactions, hence reinforcing a user's pre-existing views. Twitter works via this algorithmic logic, since the criteria it uses to select the content it shows to its users is based on an automated algorithm that is ultimately responsible for providing each account with content similar to that with which it usually interacts (thus helping to form an information bubble).[4] This algorithmic amplification limits users' options and may increasingly come to favor extreme and marginal content, resulting in a phenomenon known as algorithmic confusion.[5]

27. **Echo Chamber:** A concept linked to mass media, used primarily to refer to a set of ideas of the same ideological orientation that is amplified and transmitted among a specific group of users.[6] An echo chamber is characterized as being closed and static, allowing users who share similar interests and proclivities to propitiate the active dissemination of information.[7] Additionally, an echo chamber tends to refer to an environment in which other users and ideas are absent, if not actively excluded and discredited.[8]

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[1] North, S. (September 19, 2020). *Three Easy Ways to Spot Coordinated Inauthentic Behavior Online*. North Cyber Research. https://samanthanorth.com/three-easy-ways-to-spot-coordinated-inauthentic-behavior-online/.

[2] Howard, P. N., and Bradshaw, S. (2019). *The global disinformation order 2019, Global Inventory of Organised Social Media Manipulation*. Oxford University. https://comprop.oii.ox.ac.uk/wp-content/uploads/sites/93/2019/09/CyberTroop-Report19.pdf.

[3] Ibid.

[4] Ojeda, A. (2020). "Cámaras de eco y desinformación: Efectos amplificadores de las redes digitales en la polarización social de 2019." *Cámaras de Eco y Desinformación: Efectos Amplificadores de Las Redes Digitales En La Polarización Social de 2019*, 116–117.

[5] Sadagopan, S. M. (February 4, 2019). "Feedback loops and echo chambers: How algorithms amplify viewpoints." The Conversation. https://theconversation.com/feedback-loops-and-echo-chambers-how-algorithms-amplify-viewpoints-107935.

[6] Martín, J. (2019, June 5). "La cámara de eco desmitificada por un estudio español." Blogthinkbig.Com.https://blogthinkbig.com/camara-eco-informacion.

[7] Choi, D., Chun, S., Oh, H., Han, J., and Kwon, T. (2020). "Rumor Propagation is Amplified by Echo Chambers in Social Media." *Scientific Reports*, *10*(1), 5. https://doi.org/10.1038/s41598-019-57272-3.

[8] Gurteen, D. (October 27, 2020). *Filter bubbles, epistemic bubbles and echo chambers*. Conversational Leadership. https://conversational-leadership.net/echo-chambers-filter-bubbles/.

Defining and Categorizing Information

The classification algorithm identifies social media content and classifies it accordingly. By inputting consistent labeling criteria, we have manually trained the classification algorithm to avoid possible errors and biases.

A relevant typology for the classification proposed in this project is provided by Tandoc et al.,[9] to distinguish between disinformation and misinformation. As shown in the figure below, Tandoc et al. rely on the level of factuality (i.e., the degree to which a publication is based on objective and verifiable data) and intention (the key variable that distinguishes disinformation from misinformation) of a dataset to guide their classification.

For this project, our classification mode—consistent with the extant research—includes the following categories:

1. **True**: Authentic, objective, and verifiable information. Included in this category are tweets referring to topics related to the COVID-19 pandemic, its treatments, and vaccines.

2. **Misinformation**: False information shared inadvertently, without the deliberate intent to mislead audiences.[10][11][12]

3. **Disinformation**: False information that is deliberately created or shared. There are two key aspects to disinformation: it is intentional and can be verified to be false (or is otherwise unverifiable). Disinformation seeks to mimic authentic news sites and portals. Disinformation includes news fabrication (a practice of attempting to mimic legitimate news sites to give the audience the impression that the false information is true) and photo or video manipulation. (On social networks, this usually occurs when an account shares a photo or video from the

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[9] Tandoc, E., Lim, Z., & Ling, R. (2017). "Defining 'Fake News': A typology of scholarly definitions." Digital Journalism, 6(2), 137-153. DOI: 10.1080/21670811.2017.1360143

[10] Shu, K., Sliva, A., Wang, S., Tang, J., & Liu, H. (2017). "Fake News Detection on Social Media: A Data Mining Perspective." ACM SIGKDD Explorations Newsletter, 19(1), 22–36. https://0-doi-org.biblioteca-ils.tec.mx/10.1145/3137597.3137600

[11] Lazer, D., Baum, M., & Benkler, Y. (2018). "The science of fake news." Science, 359(6380), 1094-1096. DOI: 10.1126/science.aao2998

[12] Landon-Murray, M., Mujkic, E., & Nussbaum, B. (2019). "Disinformation in Contemporary U.S. Foreign Policy: Impacts and Ethics in an Era of Fake News, Social Media, and Artificial Intelligence." Public Integrity, 21(5), 512–522. https://doi.org/10.1080/10999922.2019.1613832

past as if it were current; or presents a photo or video as if it were from one country when really the photo or video was taken or recorded in another country).[131415]

4. **Propaganda**: Information that seeks to influence public perception in favor of or against a certain political, ideological or partisan stance. In Mexico, for example, Twitter is divided into pro-Andrés Manuel López Obrador (AMLO) propaganda and anti-AMLO (or pro-#VaPorMexico) propaganda.[16]

5. **Unverifiable**: This category groups together posts/tweets that, although related to the topics of the COVID-19 pandemic, its treatments, and vaccines, lack propagandistic content and cannot be classified under the previous categories. This category includes rumors, as long as they do not seek to mislead audiences; tweets sharing memes or ironic posts; news satire (e.g., the Chanel Torres show, or American shows such as "The Daily Show" or "The Tonight Show"); and news parody sites (e.g., El Deforma or The Onion in the United States).[17]

[13] Pérez-Rosas, V., Kleinberg, B., Lefevre, A., & Mihalcea, R. (2018). "Automatic Detection of Fake News." Association for Computational Linguistics. New Mexico. https://www.aclweb.org/anthology/C18-1287

[14] Kaliyar, R. K., G/oswami, A., Narang, P., & Sinha, S. (2020). "ZDNet – A deep convolutional neural network for fake news detection." Cognitive Systems Research, 61, 32–44. https://doi.org/10.1016/j.cogsys.2019.12.005

[15] Furini, M., Mirri, S., Montangero, M., & Prandi, C. (2020). "Untangling fake-news and truth in social media to understand the COVID-19 Coronavirus." In 2020 IEEE Symposium on Computers and Communications (ISCC) (pp. 1-6). IEEE.

[16] Burkhardt, J. (2017). "Combating fake news in the digital age" (1st ed.). Chicago, IL: Library Technology Reports. Vol. 53, no. 8.

[17] Kim, S., & Kim, S. (2020). "The crisis of public health and infodemic: Analyzing belief structure of fake news about COVID-19 pandemic." Sustainability, 12(23), 9904.

A Comparative Analysis of Disinformation and Propaganda in Latin America

The purpose of this section is to provide a comparative analysis of the disinformation studies conducted by our research partners in their respective Latin American countries. The research teams identified, described, analyzed, and illustrated the narrative dynamics, actors, propaganda, and erroneous information spread by leading foreign state media outlets directed at Latin American audiences.

China and Russia are active in disinformation, misinformation, and propaganda in Latin America. Chinese and Russian media giants, such as Sputnik Mundo, RT en Español, and Xinhua are state-run media outlets that function to produce propaganda and disinformation that will assist their governments in gaining influence. Both China and Russia have invested substantial resources to draw near to the region and to pull its leaders into closer alignment with their narratives and worldview.

While the approaches and motives of Chinese and Russian misinformation campaigns in particular have a degree of similarity, they also have significant differences. Russia's approach across the region is more overt and direct, and its goal is to broadly disrupt regional democracies by fomenting unrest and weakening the U.S. role as a global and regional hegemon. The research shows that Russia seeks to play the role of spoiler in countries that the U.S. has longstanding relations with, while investing in building alliances that can extend its sphere of influence to Latin America. The Chinese government's approach is more subtle, using disinformation, misinformation, and propaganda to erode the public trust in democratic forms of governance, including the press. Chinese narratives generally are designed to stress the role of the Asian country as a benevolent partner across strategic points of engagement—commercial, geopolitical, or socioeconomic—and to discredit the activities of the United States.

COUNTRY STUDIES

Venezuela

Venezuela has an active information ecosystem, comprised of both traditional forms of media (newspapers, radio, and television) and a social media space with an estimated 12 million users across Facebook, Instagram, and Twitter. The main internet provider is the public access service CANTV-ABA, which accounts for 66.4 percent of internet subscribers. Freedom of expression and information are severely restricted in Venezuela. CANTV-ABA works intermittently (due to periodic power outages) and blocks numerous independent portals, limiting citizens' access to information. This media environment is part of the reason why the Venezuelan authorities can so thoroughly broadcast and disseminate its domestic and regional ideological agenda.

A. Methodology:

Researchers from Caracas-based Medianálisis used qualitative and quantitative methodologies to analyze disinformation based on the procurement and distribution of COVID-19 vaccines. The quantitative analysis was conducted through the use of technology developed by the Tecnólogico de Monterrey team to detect misinformation, incidental false information, and propaganda on social networks. Sentiment analysis was a key feature used specifically for this study to provide a more robust picture of how the networks of disinformation affected audiences and how they connected amongst themselves.

The research period covers August 2020 to July 2021 and was conducted by identifying a key issue area, then choosing sources to monitor over a specific period of time. The research also includes a brief examination of the role of Chinese and Russian media networks in Colombia and their role in sowing discord among civil society key players during local street protests.

B. The COVID-19 Pandemic as a Primary Issue:

In 2020, Venezuela was hit hard by the COVID-19 pandemic. Treatment of COVID-19 rapidly became a geopolitical issue, with the government vilifying U.S. efforts to help with vaccines and praising those of Russia and China. The investigation's results demonstrate that the Venezuelan government is carrying out direct disinformation activities aimed at misleading and promoting social polarization in the country around key issues such as the COVID-19 pandemic.

Russia, in particular, has been a major driver of disinformation. In Venezuela, Russia has sought to discredit Western vaccines and cast doubt on their effectiveness in order to promote its own vaccine: Sputnik V. However, it has misled regional audiences with the delivery of vaccines, mainly on timelines, international scientific accreditations, and effectiveness. For example, Venezuela received the first dose of the vaccine, but still has not received the second one even though Russian and Venezuelan government officials had announced it would be readily available.

China, another active geopolitical actor and ally to the Maduro regime, has used Russia's relationship mechanisms with Venezuela to penetrate the region and carry out its own disinformation activities. In the specific case of the Sinopharm vaccine, it uses the same strategy as Russia to spread inaccurate information about all Western vaccines and influence public opinion in favor of its vaccines.

Both the Russian and Chinese media portray their countries as allies and unconditional friends of Venezuela in the face of the "blockade"—that is, sanctions and alleged acts of aggression imposed by the United States. Venezuelan authorities have readily adopted the narrative that China has efficiently managed the pandemic. The project's Venezuela team also stresses that the disinformation generated by Venezuela and its allies, Russia and China, has contributed to the dismantling of democracy in the country. The damage is not only domestic; the Venezuela team found that the Venezuelan government engaged in

numerous efforts to influence Colombian politics, seeking to stir up social unrest through domestic wedge issues.

C. Geopolitical Context:

The political, economic, and humanitarian situation in Venezuela has been a source of great controversy and instability in the Americas. The Maduro regime's economic mismanagement and its increasingly repressive nature has culminated in, among other things, a massive refugee crisis, with 5.2 million Venezuelans leaving the country—many of them heading to Colombia, Ecuador, and Chile. Venezuelan government propaganda, backed by sympathetic Chinese and Russian misinformation, has sought to inflate the impact of U.S. policy toward Venezuela, misleadingly arguing that the U.S. is enforcing a total "blockade" against Venezuela. Certainly, U.S. economic sanctions have hurt, but not to the magnitude portrayed by the Maduro regime and its allies.

Argentina, Chile, and Peru

In the CADAL study, Carmen Grau, Verónica Repond, and Juan Pablo Cardenal assert that China and Russia through their media companies and personnel are manipulating information, omitting data, and pushing propaganda with a political bias in Argentina, Chile, and Peru. The mixing of truths with falsehoods, combined with a knowledge deficit about China and Russia as well as the questionable ethical behavior of native journalists, has been effective in pushing China's and Russia's agendas. It has also helped to stir up anger and angst between local populations and their governments (more so in Chile and Peru than in Argentina).

The treatment of the COVID-19 pandemic provides insights as to the nature of the Chinese and Russian misinformation machine in the three countries examined by the CADAL team. China has managed to nurture and deepen the view in all three countries that it is an essential partner for each country's future prosperity while also pushing the narrative that the United States' role in each country is in decline. Russia's role in the three countries varies, largely centered around a desire to cultivate a constructive image, but also taking advantage of fast-moving regional developments to stir civil unrest in Chile and Peru when advantageous to it. Both Russia and China invested considerably in promoting a steady flow of positive news regarding their vaccine production and distribution.

A. Methodology:

The first part of the CADAL report identifies, details, and analyzes the narratives generated by the most active foreign state media in the CADAL team's region of study—in particular, Chinese and Russian state media companies and the way in which they cover the COVID-19 pandemic, among other themes, in Argentina, Chile, and Peru.

The main state Chinese and Russian media companies used in the study included two Russian outlets, the television website RT en Español, and the news agency Sputnik Mundo. The study looked at the following Chinese news agencies: Xinhua, the periodical

Pueblo en Línea, the television station CGTN, and China Radio International. Key words used in this part of the analysis included Sinovac, CoronaVac, Sinopharm, CanSino, Pfizer-Biontech, AstraZeneca, Moderna, Johnson & Johnson, and Janssen.

The CADAL team's primary conclusion was that China's vaccine diplomacy efforts were overwhelmingly portrayed in a positive light while various Western efforts were depicted negatively. Russia's vaccine also received favorable media treatment in each country, a result of longstanding efforts by Moscow to reach local audiences. From a thorough review of the team's regional periodicals, international vaccines are cited a total of 3,599 times in 1,207 articles.

B. The COVID-19 Pandemic as a Primary Issue:

The study found that China had a two-step campaign in creating and advancing its narrative about COVID-19. The first step was to deny accusations that the pandemic originated in China. The second step was to portray China as a responsible and generous member of the international community; a friend who could provide and donate medical equipment. This included pushing a narrative that Chinese vaccines had positive results and Western ones had numerous concerning side effects or low effectiveness. To spread the message, China employed its state communication agencies in each country. Another part of the Chinese message was that its successful treatment of the pandemic at home was one more example of the achievements of the Chinese Communist Party, highlighting the superiority of the Chinese model of management and development that other countries should emulate.

Russian state media employed relatively similar messaging, highlighting the distribution of its Sputnik V vaccine, and portraying itself as a generous partner to the region.

C. Geopolitical Context:

For China, the countries of Argentina, Chile, and Peru are important for its economic and geopolitical agenda. While China has scaled the heights of the global economy, behind only the U.S. in size, it remains dependent on substantial quantities of natural resources, including Argentine soybeans, beef, and shrimp; Chilean copper and zinc; and Peruvian copper ore, refined copper, and animal meal and pellets. In the global economy's transformation from a hydrocarbon-based energy system to alternatives, such as wind and solar power and electric vehicles, Argentina, Chile, and Peru are important sources of key minerals.[18]

In this context, Beijing aspires to a propaganda strategy in the region that serves to influence the respective societies. This strategy is not solely based on businesses and state-owned media companies, but includes "allies," including institutions or members of the local elites that are courted by Beijing through a variety of all-paid trips to China, in exchange for a favorable public opinion nudge back at home. The local component is

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[18] Among the key materials required for the green transformation are copper, zinc, and molybdenum. Among the top sources of lithium are Argentina and Chile. In terms of copper, Chile has 23 percent of the world's reserves and Peru 10 percent. All three countries also have considerable potential for hydropower.

important. This is particularly the case in Peru, which has a sizable community of Chinese-descended people, called the Tusan.[19] China has made an effort to cultivate the Tusan, along with Peru's elite, to develop a positive image and exert influence on such issues as Taiwan, human rights, and Hong Kong.

Russia's geopolitical reach in Argentina, Chile and Peru is not as extensive as China's reach. It is not a major trade partner or investor in any of the economies. Russia, however, recognizes the strategic importance of the region, especially as the development of closer relations allows it to gain traction, through traditional and non-traditional social media avenues, as a world power and rival to the United States. The CADAL team found that Russia has also made use of its cyber-trolls to incite social unrest in Chile, a country closely tied to the United States.

Colombia

The third study was conducted by a research team from the Universidad del Rosario in Colombia. The Latin American country has a relatively open information landscape, with a robust flow of viewpoints. Much of the Colombian media is held by the private sector, though there is a smaller state sector. Over the last decade, Twitter, Facebook, WhatsApp, and other social media platforms have become important arenas for political discourse.

The Universidad del Rosario study makes use of the term "sharp power," which refers to "a new phenomenon that is often employed by authoritarian countries aiming to attract, distract, and manipulate audiences in democratic countries through its communications outlets, cultural centers and global language learning."[20]

The Colombia team also notes that sharp power may be used to create a positive image at both the international and national level, where it can create political divisions and manipulate audiences by creating controversy within society or with other countries. As one of the United States' strongest allies in Latin America, Colombia is a particular target for sharp power activities.

A. Methodology:

The Colombian study explains the phases of the disinformation process, focusing on media outlets with international reach that are funded by China, Russia, Venezuela, and Cuba. The COVID-19 pandemic, among other issues, was used to test data. The researchers examined 86,615 Twitter posts published in Spanish by nine news agencies

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[19] Peru's Tusan community is said to range from 1 percent of the national population to as high as 10 percent. Actual numbers are not known as there exists no official data on how many Peruvians identify themselves as being of Chinese descent.

[20] For further information on sharp power see C. Walker, "What Is Sharp Power?" *Journal of Democracy*, (2018) 29(3): 9-23.

between September 1, 2019 and September 30, 2020.[21] Through an analysis of these posts, the research team determined that inauthentic or inorganic behavior was driving a disproportionate replication of certain viral content. To better understand these trends, 1,464 user profiles were manually reviewed, with the research divided into two stages:

1. Identification of each foreign state's—and each foreign state media apparatus'—country strategy, including central themes and top posts by affiliated media. This provided deep insight into the first of the two phases of the disinformation process: creation and production of messages.

2. Analysis and observation of users who replicate the posts identified in the first stage, in order to address the last phase of the disinformation process: dissemination.

B. The COVID-19 Pandemic as a Primary Issue:

The study found that the COVID-19 pandemic was not a priority topic for foreign state media in Colombia. Only China covered the COVID-19 pandemic during the period of study and it limited its content to information about the number of cases in Colombia.

Chinese state media in Colombia aimed to paint a positive image of the PRC in the context of the COVID-19 pandemic, though the impact was limited. Russian state media focused less on the COVID-19 pandemic and more on wedge issues that might undermine the close relations between Bogotá and Washington.

C. Geopolitical Context:

Colombia is an important U.S. ally in Latin America. The U.S. is Colombia's leading trade partner and the largest single source of foreign investment. Additionally, the U.S. has a track record of providing significant amounts of assistance to the Latin American nation in such areas as promoting the peace process (between the government and the rebel group FARC (Fuerzas Armadas Revolucionarias de Colombia, or Revolutionary Armed Forces of Colombia)) and housing for Venezuelan refugees.

At the same time, Colombia has developed significant trade relations with China—China is Colombia's second largest trade partner behind the United States. In June 2021 it was announced that Colombia plans to join China's Belt and Road Initiative (BRI), a development that could further entwine the Colombian economy with China's, possibly at the expense of the United States.

Russia's interest in Colombia has been more asymmetrical; as a strong U.S. ally, Moscow sees Colombia as a proxy to affect U.S. influence in Latin America. With the COVID-19 pandemic, Russia has sought to discredit U.S. efforts in vaccine diplomacy and U.S. foreign policy more broadly.

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[21] The nine news agencies used were Xinhua and China Global Television Network (CGTV) from China; Actualidad RT (and its alternative RT Ultima) and Mundo Sputnik from Russia; Telesur from Venezuela; and Granma, Prensa Latina, and Cubadebate from Cuba.

Mexico

The dominant political friction in Mexico is between President Andrés Manuel López Obrador (AMLO) and those opposed to his agenda for the country. This study of the information environment in Mexico uncovered less persistent foreign state media influence than in other countries, but a highly divisive social media environment, centered around AMLO's polarizing left-of-center populism. As for evidence of misinformation, disinformation, and propaganda from foreign state media, the Mexico team found these sorts of activities to be most prominent in the cultural space.

A. Methodology:

The TEC de Monterrey team used an algorithmic tool to assess and evaluate social media activity related to the COVID-19 pandemic and vaccine-related efforts from foreign state and local accounts. The analysis was done at a national and state level (*see* Nuevo León case study). The Mexico analysis focuses on a sample of 20,036 Twitter posts, out of a universe of more than 200,000 posts. Included in the examination of data was the origin of the Twitter posts, the "retweeting" of those posts, the lifespan of those posts, and a network analysis surrounding those posts, applying sentiment analysis tools to paint a comprehensive picture of spread and impact.

B. The COVID-19 Pandemic as a Primary Issue:

The COVID-19 pandemic struck Mexico hard, with the economy contracting by more than 8 percent. The country's tourism industry was hit particularly hard, exacerbating unemployment. The pandemic, which has come in three waves (the last in September 2021), has also worsened social conditions and added fuel to the country's political divisions.

The Mexico team found conflicting narratives in favor and against the government with respect to its handling of the COVID-19 pandemic. At the same time, the report indicated that while there was no evidence of China or Russia systematically affecting the conversation about the COVID-19 pandemic, there was a significant degree of cultural or diplomatic activism. The data examined highlighted clear Chinese investments in engaging via cultural diplomacy and economic clout, as well as some limited Chinese government propaganda in Mexico. There is little evidence of similar patterns of activity from Russian or other foreign state media.

C. Geopolitical Context:

Mexico is an important U.S. ally and trade partner, a position bolstered by its being a member of the U.S.-Mexico-Canada Agreement (USMCA) and sharing an extended border with its northern neighbor. At the same time, Mexico's southern border draws it into the politics of Central America, in particular the Northern Triangle countries of Guatemala, Honduras, and El Salvador, where the combination of transnational crime, insecurity, and poverty have resulted in substantial migration, most of which has as its destination the southern U.S. border.

While U.S.-Mexican relations have generally been positive through the last two decades based on a similar market-oriented approach to economic affairs and a belief in democracy, the populist approach of AMLO has raised serious geopolitical questions. While foreign investors have become more cautious on Mexico, AMLO has also sought to re-concentrate political power into the office of the president and trim democratic safeguards. The political dialogue, as reflected in the information ecosystem, has become more divided between those who are for the president and his programs, and those who are opposed. The state of political discourse and debate has become more complicated given controversies over whether President López Obrador mismanaged the COVID-19 pandemic.

China currently has an economic presence in Mexico, namely in manufacturing, the oil sector, and, most recently, in the lithium mining sector. Considering the unsettled nature of Mexican politics and the divisive undercurrent in the country's information ecosystem, there could be a more concerted push for China to make inroads via a more sustained propaganda effort.

THE DISINFORMATION LANDSCAPE: COMPARING THE DATA

Key Points

The cases covered in this report—Argentina, Chile, Colombia, Mexico, Peru, and Venezuela—share striking similarities and key differences. All six countries have experienced some form of disinformation, misinformation, or propaganda, either from Russia and China or from domestic political actors. For all of the countries studied, the COVID-19 pandemic has become a major target of misinformation and disinformation. In Argentina, Chile, and Peru, Chinese and Russian agents have used propaganda in an attempt to bolster their countries' public image. In Mexico, conflicting narratives about the government's management of the pandemic have polarized and divided the country as much as any domestic issue. In Colombia and Venezuela, the engines of foreign state media focus more on geopolitical battles and wedge social issues than they do on the pandemic per se.

COVID-19 and Vaccine Diplomacy

Russia and China have used COVID-19 diplomacy in Argentina, Chile, Colombia, Peru, and Venezuela to improve their public perception in those countries. Their methods varied by country. In Venezuela, the government actively promoted the Russian government's role in the Sputnik V vaccine, and the president and vice president celebrated Russia's involvement through social media posts. In Argentina, Chile, Colombia, and Peru, Russian and Chinese state media relied on positive commentaries from individuals and institutions outside of government.

The Russian government promoted a narrative that the distribution of Sputnik V demonstrated Moscow's standing as a great power, capable of playing a constructive role in the region. The reported higher rate of success of Sputnik V over its Chinese competitor vaccines has also elevated Moscow's standing vis-à-vis China. At the same time, Russian COVID-19 diplomacy sought to diminish the United States' role in Latin America. Russian commentary in Mexico was more muted in this regard.

The Chinese state media narrative around the COVID-19 pandemic was that one should not look to the country as the pandemic's origin point, but rather consider it in a positive light as a source of international medical advice and assistance. Although Chinese vaccines, such as Sinopharm and Sinovac, have had questionable results, many in Latin America have viewed having access to at least one vaccine as better than none. Furthermore, Chinese and Russian narratives go to lengths to stress that they were providing vaccine assistance and that the U.S. was not.

Results of the anti-U.S. message varied. As the Colombia team's research notes, "COVID-19 was not a priority topic used to impact the information ecosystem." Chinese propaganda probably had the greatest impact in Argentina, Chile, and Peru, where the Chinese government has sought to also cultivate members of the press, academia, and the policymaking community.

The Venezuelan case is unique. Venezuela's authoritarian government is an ally of China and Russia, and is one of the principal sources of disinformation in the country. Disinformation and propaganda in Venezuela target domestic opposition parties and political figures, as well as the United States and Colombia, often emphasizing the strength of the Maduro regime, the weakness of opposition parties, and the harms caused by U.S. economic sanctions. Venezelan government sources offer a positive narrative of Russia and China's role in combating the COVID-19 pandemic.

Geopolitical Impact

The impact of Russian and Chinese disinformation varies in Latin America. In Argentina, Chile, Colombia, and Peru, Chinese and Russian disinformation seeks to generate public distrust toward democratic institutions; deepen existing societal fault lines; and erode popular faith in democratic processes. As the Colombia team's research notes, "Russia

focuses on posts that are critical of democratic countries with strong relationships with the United States. It resorts to constant mention of the shortcomings of these government institutions and visibility is given to social protests, acts of repression and human rights violations."

Chinese and Russian disinformation portrays the United States as a declining power with a failed or clumsy global presence. While Russia provides a more forceful, negative view of the U.S. role in Latin America, China plays a subtler role. China has grown its presence in Latin America through trade and investment at the expense of the U.S., with the ultimate goal of securing safe sources of critical natural resources. To achieve this, it has practiced economic statecraft and actively cultivated local political, academic, and economic elites. China's COVID-19 narrative fits this pattern.

While Chinese disinformation, misinformation, and propaganda seeks to capture hearts and minds of populations in Latin American countries by profiling the PRC as a reliable partner, Russia is more interested in sowing social discord and chaos. This has particularly been the case with Russian efforts in Chile and Colombia, two countries with longstanding close ties with the United States.

Latin America's Social Protests and External Factors

Russia's role as a disruptive spoiler and China's aspirations to become a hegemonic power in Latin America have led to two very different disinformation strategies over the past several years. The street protests and social unrest that rocked Chile (in 2019-2021), Colombia (2019-2020), and Peru (2019-2020) illustrate this dynamic well. The root causes for the protests varied from the desire by large segments of the Chilean population for a change in the country's constitution to demands in Colombia to implement anti-corruption measures, police reform, and the 2016 peace agreement with the FARC. One common thread throughout these countries was frustration with deepening economic disparities and social injustice, compounded by the harsh economic impact of the COVID-19 pandemic.

Another common thread was an aggressive misinformation campaign by Russian actors against a number of local governments to stir up social unrest. Moscow's sharp power and emphasis on social unrest has continued through the present day in Colombia, where Russian media coverage of COVID-19 has been "scarce," compared to coverage of social protests, human rights violations, and critiques of President Iván Duque's government.

Mexico Apart

The experience of Mexico differs from those of the other Latin American countries examined in this report. As the Mexico team's research states, "We did not find evidence of an organized and systematic intervention of accounts associated with the Chinese

government in the discussion about COVID-19 in Mexico." Their research did find that "the accounts that reproduce content linked to the Chinese government represent a type of social communication or cultural diplomacy, but not political propaganda or disinformation."

This does not mean that Mexico is immune to misinformation, disinformation, or propaganda. In fact, there are specific accounts and networks that amplify engagement around disinformation and misinformation, as the Nuevo León case study demonstrates

However, the Mexico team's analyses of social media networks find that most misinformation is driven by domestic political actors divided over President López Obrador's plans for Mexico's future development, rather than by foreign agents. The team finds that "the political polarization observed in Mexico has been exacerbated in recent years by the president's actions and the reactions of his critics." A key recommendation from the findings was a call for greater collaboration among academics, journalists, and civil society, as well as more investment in the field to counteract the spread of polarizing messages that yield radicalization and possible violence. The active struggle for influence in Mexico's social network reflects one of the deepest polarizations in the country's history. This was reflected in differing opinions over the government's treatment of COVID-19, a sore point for many Mexicans.

While Chinese engagement in Mexico may not be systematic and direct, Beijing's role is growing. Although considerably behind the U.S., China is Mexico's second largest import partner and its number three export market. It is also a major investor in Mexico. China, which tends to rely on a longer term political and economic geopolitical strategy, is willing to maintain a trend toward economic engagement. If Mexico's political polarization continues (and political stability is impacted), China may begin to use social networks more frequently to influence public opinion. Mexico's politics are not static; neither are the strategies of external powers like China that aim to exert greater influence in the region.

LOOKING AHEAD

Foreign state media disinformation, misinformation, and propaganda—and Chinese and Russian efforts in this space in particular—represent a major challenge both for the United States and Latin American countries. While the United States faces a growing challenge from China in what it regards as a key strategic region, the threat of misinformation from China and Russia is a clear and present danger to the health and survival of democratic governments throughout the region. The negative impact of the COVID-19 pandemic has made this an even greater risk. Russia and China recognize that it is important to win hearts and minds; misinformation, disinformation, and propaganda provide a powerful card to displace U.S. influence, something that policymakers in Washington and the respective Latin American capitals need to strongly consider and counter.

Tecnológico de Monterrey (TEC) - Mexico

EXECUTIVE SUMMARY

Among the first to analyze the spread of fake news about COVID-19 on Twitter in a language other than English, this report breaks down, on a granular level, how disinformation in polarized environments such as Mexico can become a tool to promote political positions (either for or against the government). Mexico's political polarization has been exacerbated in recent years by the actions of President López Obrador and the reactions of his critics. In its study, the TEC team did not find evidence of an organized and systematic intervention of foreign state media accounts in the discussion about COVID-19 in Mexico. They found that the accounts that reproduce content linked to the Chinese government in particular represent a type of social communication or cultural diplomacy, but not systematic political propaganda or disinformation. As for its understanding of Russian state media, a more engaged actor in other environments, the TEC team found that there was distinct activity from state sponsored media such as ActualidadRT. However, such state media outlets have not exercised influence through the spreading of disinformation, but rather by promoting favorable coverage of the Sputnik V vaccine. The sentiment analysis conducted by the team, along with data visualization techniques, helped to shed light on how these cultural diplomacy and domestic dispute networks of information operate in Mexico, adding an extra layer of visual and phenomenological understanding.

Glossary of Terms

1. **Topic modeling**: This model refers to the application of statistical methods for the discovery of a set of "topics" present in a set of messages or documents. This model aims to determine the set or distribution of words that help to identify a possible topic in a general way.

2. **Application Programming Interface (API)**: An interface that allows two programs to communicate with each other using an established protocol.

3. **Relational Database (BDR)**: A type of database that stores data in tables that are related through a unique identifier (key).

4. **Bidirectional Encoder Representations from Transformers (BERT)**: Language representation model designed to pre-train deep bidirectional representations from unlabeled text by jointly conditioning both the left and right contexts on all layers.

5. **Compound**: A score from -1 to 1, where -1 indicates the highest degree of negativity of a text, and 1 indicates the highest degree of positivity. Values close to 0 denote neutrality.

6. **Bulk download**: The automatic and uninterrupted process of collecting tweets, users, and related entities since January 1, 2020, through Twitter API academic access.

7. **Gini Index**: This coefficient calculates the income distribution of a specific population, providing an estimate of economic inequality on a scale from 0 (absolute equality, in which all individuals receive an equal income) to 1 (absolute inequality, in which one individual receives all accumulated income).

8. **Latent Dirichlet Allocation (LDA)**: A statistical model that allows the discovery of abstract topics, also known as topic modeling.

9. **Snowball method**: A research method, used in the literature review, that consists of exploring a source and its connections with other sources through citations, thereby identifying a scholarly network. In this context, it is used for tweet content, tracing the network from followers and people who follow the user.

10. **Modularity**: A measure of network structure (community detection) designed to measure the strength of the division of a network into modules.

11. **Negativity**: A term associated with sets of words that relate to feelings of distrust, sadness, and pessimism.

12. **Positivity**: A term that refers to a set of words that denote positive feelings such as joy, hope, and confidence.

13. **Precision**: The ratio TP / (TP + FP), where TP is the number of true positives and FP is the number of false positives. Precision is, intuitively speaking, the ability of the classifier to not label a negative sample as positive.

14. **F1 Score**: A weighted average of accuracy and recall, where an F1 score reaches its best score at 1 and its worst score at 0.

15. **Recall**: The ratio TP / (TP + FN), where TP is the number of true positives and FN is the number of false negatives. Recall is, intuitively speaking, the ability of the classifier to find all positive samples.

16. **#RedAMLO**: This hashtag is used by accounts supporting President López Obrador's government, either in tweets or in their account descriptions.

17. **Support**: The number of appearances of each tag.

INTRODUCTION

With the coming of the digital age and the development of social networks, a growing number of people around the world have found an unprecedented space for communication and access to information. The wealth of human knowledge is within the reach of contemporary societies with internet access and smart devices that connect individuals to the digital world. Unlike the mass communication promoted by television, radio, and newspapers before the rise of the internet, the digital age allows individuals to decide where to find the information they seek.

Unlike the hegemonic era of traditional media in which the audience depended on the information broadcasted by television or radio, today each person can choose from a myriad of sources from any country to access the information they want. However, of the universe of digital media that exists, not all contain objective, factual information.

Although the disinformation phenomenon did not emerge in the digital age and has been spread for centuries,[22] it has found fertile ground in social networks. This is because social network algorithms filter information according to the interests, tastes, and profile of each user. This allows consumers of information to use social networks for a longer period of time. As users engage with social networks, the algorithms "learn" what content and which accounts are of most interest based on each person's profile. Each like and retweet teaches the social network's algorithm the user's preferences, generating an information bubble.

This "bubble" leads the user to maintain a bias regarding the information they consume since algorithms discard or sideline information that does not fit the tastes of each person. According to Shu et al.,[23] the information bubble "makes users believe that the likes of the group of users inside the bubble represent the likes of the majority of people."[24]

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[22] According to Burkhardt (2017), fake news has been used since ancient times, even before the rise of the press. For example, the author presents the case of "Procopius of Caesarea [who] used fake news to smear the Emperor Justinian. While Procopius supported Justinian during his lifetime, after the emperor's death Procopius released a treatise called *Secret History* that discredited the emperor and his wife" (p. 5). However, with the rise of the press it has become easier to disseminate information, including biased and misleading information.

[23] Shu, K., Sliva, A., Wang, S., Tang, J., & Liu, H. (2017). Fake News Detection on Social Media: A Data Mining Perspective. ACM SIGKDD Explorations Newsletter, 19(1), 22–36. https://0-doi-org.biblioteca-ils.tec.mx/10.1145/3137597.3137600.

[24] See also the recent work by Chris Bail Breaking the social media prism (2021) where he questions the so-called "sounding board" of social networks. He recognizes that part of the problem of the polarization that is generated on social networks resides in ourselves as social network users. "In the era of increasing social isolation, social networking platforms have become one of the most important tools we use to understand ourselves and others. We are addicted to social media not because it provides us with flashing images or endless distraction, but because it allows us to do something that humans struggle to do: present different versions of ourselves, observe what other people think of themselves, and revise our identity accordingly...The prism of social media feeds the status-seeking of extremists, silences moderates who think there is little to be gained from discussing politics on social media, and leaves most of us deeply suspicious about others on the other side, and even about the size of the polarization" (p.10).

In this sense, the **bubble that surrounds each user leads people to face two cognitive biases: naïve realism**, which consists of users believing that only their perception of reality is correct; **and confirmation bias**, which leads users to consume information that confirms their beliefs and perceptions of reality, thereby discarding all information that is contrary to their views.

However, this phenomenon mostly affects societies that, due to their political, social, and/or economic reality, are polarized. Polarization becomes a trigger for the propagation of misleading information and propaganda (both for and against) by sharing information that strengthens one's ideas and approaches, and which generates incentives to share partial, biased, or false information.

The dissemination of false information and propaganda, whether in favor of or against the government in power, is a phenomenon that impacts the effective operation of democratic systems. In polarized societies, this phenomenon is of greater concern because opposing groups or factions confront each other using biased and misleading information in order to weaken the opposing party and manipulate audiences with an incomplete vision of reality.

However, in polarized environments, while local actors seek to influence the discussion on social networks, external agents also use the disinformation ecosystem and polarization to their advantage. Foreign influence can be direct (using accounts linked to foreign governments to enter the discussion, which can be done with or without the knowledge of domestic political actors) or indirect (replicating information generated in another country using domestic accounts).

For this study, we conducted a thorough analysis of the social media ecosystem in Mexico, specifically Twitter, in order to: identify the prevalence of misinformation; evaluate the political use of social media by users (either for or against the government); and identify possible evidence of interference on Twitter by foreign actors in Mexico.

This report begins with a brief account of the attitudes toward Mexican President López Obrador, which exemplify the polarization in Mexico, as well as their impact on the discussion on social networks. Subsequently, a comparative study will be carried out to analyze the cases of Hungary, India, and Saudi Arabia to shine light on the role semi-authoritarian and authoritarian governments play in the manipulation of social networks. These cases provide relevant examples of the political use of disinformation at the domestic level (i.e., without the intervention of foreign agents). The third section presents the methodology and strategy for obtaining data samples. Finally, we analyze whether there is any evidence of foreign influence on Twitter conversations in Mexico by: (1) drawing from a random sample of statistically representative tweets (to identify actors linked to foreign governments, as well as to corroborate the existence of disinformation and the political use of Twitter at the domestic level); and (2) monitoring specific accounts

whose profiles are receptive to the interests of the Beijing government (in order to know how these accounts make use of the discussion on social media).

We then analyze whether there exists evidence of systematic disinformation and propaganda strategies implemented at the domestic level during the COVID-19 pandemic by evaluating the predominant actors in the national discussion on Twitter, creating a visualization of user networks, and building an analysis of the feelings and emotions reflected by relevant actors and factions. Additionally, we evaluate the lifespan of misinformation posts and the main narratives that have driven factions to support or oppose the federal government.

To conclude the report, we review the different policies that have been implemented in some parts of the world to curb disinformation and the spread of fake news. Some public policy recommendations are identified to address the disinformation ecosystem and the political use of social networks and aim to strengthen the democratic and deliberative nature of these settings. Furthermore, we identify challenges to implementation in the context of polarization in Mexico, as well as the vulnerability of traditional media in the face of advertising markets and digital news. Finally, we share the main conclusions of this study and potential approaches to future research.

Populism and the exacerbation of polarization in Mexico

Mexico is currently experiencing one of the most polarized moments in its modern history. Although this did not arise recently—it is a phenomenon that has emerged over decades— it has become more evident and has generated enormous uncertainty about the future of the country.

This polarization has influenced the manner in which Mexicans interact and, in order to advance the government agenda titled the "Fourth Transformation" championed by President López Obrador, has introduced sharp divisions within Mexican society between those who support the President's political agenda and those who oppose it. Consistent with global populist tendencies, the political discourse in Mexico has emphasized the belief that there are only two major groups in society (though there are many who do not neatly fit into any of these camp)s: the "people" versus the "elite"; "those at the bottom" versus "those at the top"; "us" versus "them." The tension between these factions even leads individuals who do not identify with this duality to actively participate in discussions generated around the presidential agenda.

One of the factors identified as a cause of this polarization is inequality. According to the latest estimates of the World Bank,[25] the Gini index, in which 0 represents absolute equality and 100 means absolute inequality,. is 45.4 in Mexico. Poverty is another historical factor that exacerbates this division in Mexican society. One of President López Obrador's main campaign and government slogans is: "for the good of all, the poor come

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[25] World Bank (2018). Gini index (World Bank estimate) – Mexico. DataBank. https://data.worldbank.org/indicator/SI.POV.GINI?locations=MX&name_desc=true.

first." In 2018, the year López Obrador assumed the presidency, 41.9 percent of the population was living in poverty.[26]

Both factors took center stage in the discourse of then-candidate López Obrador, who based his campaign on the promise to tackle poverty and national inequality by fighting against corruption (the central theme of the president's current discourse). However, as soon as he took office, López Obrador appealed to pre-existing differences and resentful discourse, criticizing his predecessors and citizens who do not support his agenda. In other words, the president has maintained a recurring narrative in which the opposition groups are responsible for the major problems afflicting the country, causing his supporters to echo his criticisms and attacks. Most often targeted are intellectuals, the press, businessmen, opposition parties, civil society organizations, and other actors identified (in the president's words) as representatives of "neo-conservatism" or beneficiaries of neoliberalism.

On occasions, López Obrador has identified his main critics by name, which has facilitated attacks on these critics through social networks by users who sympathize with his government. For example, in September 2020, in his morning press conference, López Obrador exposed columnists who have criticized his administration. This reflects an act of intimidation against freedom of expression that is typical of authoritarian regimes. Although López Obrador's government has not exerted direct pressure to fire his critics in the press, his intolerance to criticism could generate hostile attitudes in the coming years of his administration. [*Fig. 1*]

Figure 1. Andres Manuel López Obrador identifies critical journalists. Source: Office of the President.

One more example that allows us to understand how the president has created conditions for further polarization is the criticism that López Obrador has leveled against civil society organizations, both national and foreign. Without a doubt, the organization that has received the most criticism is Mexicans Against Corruption and Impunity (MCCI). The

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[26] National Council for the Evaluation of Social Development Policy (CONEVAL) (2021). Medición de la pobreza en México - 2018-2020. Medición de pobreza 2018-2020. https://www.coneval.org.mx/Medicion/MP/Paginas/Pobreza_2020.aspx.

organization has carried out investigations on cases of corruption since the administration of former president Enrique Peña Nieto and several cases linked to the current administration. This organization has directly questioned the prevailing presidential discourse since he took office on December 1, 2018 that "corruption is finished."

Additionally, the President has criticized the founder of MCCI, Claudio X. González Guajardo, for serving the interests of the opposition, has belittled MCCI's investigations, and has simply claimed that such investigations are false. One of the incidents that had the greatest impact on social networks occurred on May 6, when a journalist from the magazine Contralínea presented to the President the findings of an investigation that supposedly proves that the U.S. government is the main financier of MCCI. The journalist specified that "in 2019 and 2020 alone, the U.S. transferred 25.7 million pesos to MCCI".[27] In response, the President assured that he would send a diplomatic letter to the U.S. government to clarify the matter.

This case further escalated when the president insisted that the U.S. government has an interventionist foreign policy towards Mexico. López Obrador indicated that "we all know that it was very unpleasant, shameful I would say, to see the accusations made, in which opposition organizations, political organizations opposed to our government and the transformative process that is taking place in Mexico, are financed by the U.S. government. It is a clear sign of interference, of intervention by the government of the U.S. in matters that only concern Mexicans, that is why the diplomatic letter was sent."[28]

The president's statements at the May 19 press conference demonstrate increased hostility not only against a civil society organization but also against a government ally. López Obrador's statements, of course, remain uncorroborated. The U.S. government has assiduously denied such allegations, maintaining that U.S. funding of Mexican non-governmental and civil society organizations does not represent political activity, but is rather intended to address issues such as economic development, environment, justice, journalistic investigations, and other activities, in accordance with Mexican law.

In addition to the statements against the alleged interventionism, the president violated MCCI's fiscal confidentiality by exhibiting, at the same press conference, several invoices showing funding from the U.S. Agency for International Development (USAID) to MCCI [*Fig. 2*]. That afternoon, MCCI issued a press release accusing the president of violating the constitution and legislation regarding personal data protection, stating that López Obrador's conduct "constitutes a political persecution" against the organization.[29]

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[27] Andres Manuel López Obrador Press Room (May 6, 2021). Stenographic version of the press conference with President Andres Manuel López Obrador on May 6, 2021. https://lopezobrador.org.mx/2021/05/06/version-estenografica-de-la-conferencia-de-prensa-matutina-del-presidente-andres-manuel-lopez-obrador-524/.

[28] Government of Mexico (May 19, 2021). En Octubre estará vacunada toda la población mayor de 18 años. Presidential conference. YouTube. https://youtu.be /wz1_2b82i8c?t=5155.

[29] Mexicans against Corruption and Impunity (2021, May 19). Exigimos un alto a este acoso abusivo e ilegal contra de MCCI. Press releases. https://contralacorrupcion.mx/comunicado-de-prensa-acoso-presidente/.
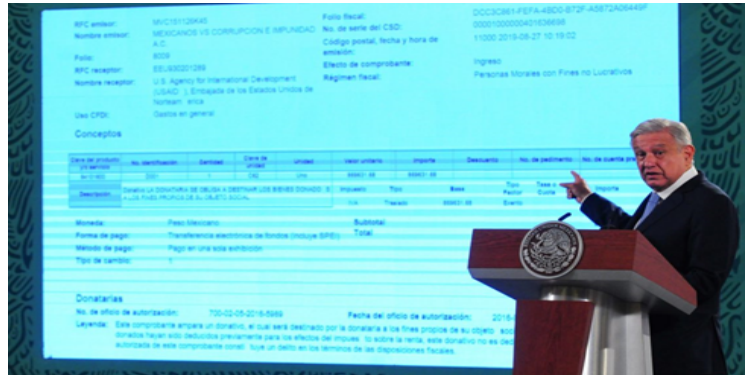
Figure 2. President López Obrador exhibits USAID funding to MCCI. Source: Office of the President.

The above exemplifies only a sample of the way in which President López Obrador's attitudes and statements have had great impact on public opinion and this impact has made its way to social networks in Mexico. **It is in this setting of growing polarization where the positions of the two major factions converge in real-time: users who support and echo López Obrador's statements, and users who criticize the president.**

After briefly reviewing the recent attitudes of López Obrador's government and how they have directly influenced public opinion, the following section will provide a comparative analysis that illustrates the actions of three governments with authoritarian tendencies that have directly intervened in debates occurring on social networks in their countries. **The cases of Hungary, India, and Saudi Arabia show a direct link between state agents and the manipulation of content on social networks for political benefit, a link that has not yet been identified in Mexico.[30] These links reflect the domestic use of social networks independent from direct foreign intervention.[31]**

Disinformation and the political use of social networks as an authoritarian strategy: the cases of Hungary, India, and Saudi Arabia

Social networks facilitate the clash between the two major antagonists, in which sympathizers and critics alike can respond to any publication. This phenomenon occurs organically in various parts of the world—that is, citizens, in general, stake out a position or criticism regarding their leaders, and a discussion is generated on social networks. However, in some countries this discussion is directed or coordinated by government agents, becoming an inorganic and artificial space for discussion. State intervention on social networks is a key characteristic of authoritarian regimes, seeking to limit freedom

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[30] In the case of Mexico, no direct and systematic participation of government agents in the promotion of disinformation and propaganda favorable to President López Obrador has been identified so far.

[31] As will be presented later in this report, the political use (for or against the government) and dissemination of disinformation on social networks in Mexico is a domestic phenomenon: it is Mexican users who promote information for political purposes and have made use of disinformation.

of expression by threatening and humiliating critics, independent journalism, and citizens who question government actions.

An example of this is the social media ecosystem in Hungary. With the accession of Viktor Orbán to the Hungarian government in 2010, a process of profound political reforms began thanks to the support of the Fidesz party (headed by Orbánuntil his election as prime minister). These "reforms" have resulted in the gradual deterioration of Hungary's democratic credentials.[32]

Orbán's policies have centralized power within state institutions, weakened the electoral system, and strengthened the role of the executive branch by declaring a state of emergency as a result of the COVID-19 pandemic (which has allowed him to rule by decree). The Orbán-*Fidesz* government has succeeded in co-opting a substantial part of the press and has besieged independent journalism, intimidated civil society organizations and actors critical of the Hungarian government.[33] Although Hungary is formally a democracy, the weakening of institutions and constraints on freedoms are rapidly eroding the political situation and moving the country closer to authoritarianism.

The social media environment in Hungary has been one of the fronts which the government has sought to influence in order to control the narrative and public discussion. In the case of Hungary, indirect influence from the Kremlin has been identified, reflecting Orbán's closeness to Russia and his rejection of European Union policies. According to the European Parliament,[34] disinformation and propaganda in Hungary are domestic phenomena resulting from the replication of information generated by Russia that aligns with the interests of the Orbán government (e.g., articles critical of European Union policies). This replicated information is used by the Hungarian media to strengthen Euroscepticism.[35]

Social networks have been used by the Orbán government and the ruling Fidesz party to weaken the opposition and online voices critical of the government. According to Freedom House,[36] disinformation and propaganda strategies have become more aggressive in the weeks leading up to the elections to strengthen the position of Fidesz and mobilize supporters of the Orbán government. The international community has also

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[32] Bogaards, M. (2018) De-democratization in Hungary: diffusely defective democracy. Democratization, Taylor & Francis Online. 25:8, 1481-1499, DOI: 10.1080/13510347.2018.1485015.

[33] Freedom House (2020). Nations in transit—2020: Dropping the Democratic Façade. Reports on Europe and Eurasia. https://freedomhouse.org/sites/default/files/2020-04/05062020_FH_NIT2020_vfinal.pdf.

[34] European Parliament (2021). Disinformation and propaganda: impact on the functioning of the rule of law and democratic processes in the EU and its Member States (2021 update). Directorate General for External Policies of the Union. europarl.europa.eu/RegData/etudes/STUD/2021/653633/EXPO_STU(2021)653633_EN.pdf.

[35] "Hungary is one of the few Member States where disinformation is very prevalent but cannot be attributed to external interference. The reason for this is that Russian propaganda is taken over by the domestic mainstream media, including the public service media, and featured as organic content." (European Parliament, 2021, p. 46).

[36] Freedom House (2018). Freedom on the net—2018: Hungary. Reports on Europe and Eurasia. Key Developments: June 1, 2017-May 31, 2018. https://freedomhouse.org/country/hungary/freedom-net/2018.

published independent investigations that, despite government pressure, have been able to demonstrate how the government has been operating on social networks.

According to these reports, the Hungarian government retains a sophisticated network of users with pro-government tendencies who receive instructions from communication coordinators to publish content favorable to Fidesz. These coordinators specify the kind of content to disseminate, the times to post on social networks, and even the kind of memes to share.[37] This mechanism is attributed to authoritarian governments (or those with autocratic tendencies) interested in having greater influence over, and limiting, freedom of expression.

Another example of social network intervention is that of the government of Narendra Modi in India. With the rise of Modi and his party—the Bharatiya Janata Party (Indian People's Party, BJP)—to power, a process of centralization of public power and the glorification of Indian nationalism and Hinduism was initiated. This has led to the displacement of ethnic minority groups and all other religions (particularly Islam) outside the pro-Hindu nationalist narrative. Prime Minister Modi has deepened Islamophobia by launching a campaign against terrorism, which has been received favorably by his supporters who view Islam and other religions as "un-Indian."[38] The international organization Freedom House[39] demoted India's democratic rating from "free" to "partly free." This is due to the promotion of discriminatory policies, violence against minorities (especially Muslims), intimidation, and the systematic harassment of independent journalists, non-governmental organizations, and critics of the Modi-BJP government. According to Freedom House, the authorities have even criminally prosecuted journalists, students, and critics using colonial-era anti-sedition laws. The political rights of minorities, especially Muslims, have been threatened by Modi and the BJP's nationalist policies.[40]

As described in Hungary's case, the existence of propaganda, fake news, and attacks on critics linked to the government (specifically to the BJP's social media department) has been reported in India. According to the Indian journalist Swati Chaturvedi, social media users belonging to a network coordinated by the BJP mock and attack opponents of the Modi government, the BJP, the independent press, and profiles promoting liberal policies.

In addition to the questioning, threats, and targeting of Narendra Modi-BJP opponents and critics by this network, users (known as internet trolls according to the disinformation literature) echo Modi's agenda and statements and generally replicate the government

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[37] "In January 2018, 444.hu reported on a sophisticated network of unpaid pro-government users that share *Fidesz*-supported content on Facebook. Commentators are given directives, sometimes multiple a day, to post particular content within a specified timeline. Those providing the order then confirm that the content was posted. Some content posted includes memes, and commentators are provided detailed instructions on how to create the images" (Freedom House, 2018).

[38] Foreign Policy (2020, July 13). Modi's Slide Toward Autocracy. FP analysis. https://foreignpolicy.com/2020/07/13/modi-india-hindutva-hindu-nationalism-autocracy/.

[39] Freedom House (2021a). Freedom in the world—2021: India. Reports on Asia. https://freedomhouse.org/country/india/freedom-world/2021.

[40] Freedom House (2021a). Freedom in the world—2021: India. Reports on Asia. https://freedomhouse.org/country/india/freedom-world/2021.

narrative. Conspiracy theories are shared in order to justify the harassment of minorities (mainly Muslims and Dalits), hate campaigns are promoted against Muslims (using Modi's justification of fighting domestic terrorism), and government mistakes are justified by shifting responsibility to opponents. In the words of Chaturvedi , the network finds itself waging a "battle[] against journalists who hold opposing views, minority communities like Muslims and Dalits, and opposition parties."[41]

One final case relevant tos government intervention on social networks is the case of Saudi Arabia. Unlike the previous two cases where functional democratic institutions exist (or have existed), Saudi Arabia has historically maintained an authoritarian political system. According to Freedom House,[42] Saudi Arabia is an "unfree" state with a rating of 7/100, given the monarchy restricts much of the political and civil rights, there are no popularly elected positions, critics are criminalized, and minorities (particularly women) are discriminated against. Due to the authoritarian political system currently in place, the interest, and actions of the country's political elite in maintaining control of public opinion is clear.

The disinformation and propaganda ecosystem in Saudi Arabia is domestic, yet its objective transcends state borders. Riyadh-driven disinformation and propaganda impacts Arabic-speaking audiences throughout the region. Efforts to influence both traditional media and social networks reflect the interest of Saudi Arabia's Crown Prince Mohammad bin Salman in upholding the monarchy's reputation (both domestically and regionally). Similar to the cases of Hungary and India, in Saudi Arabia independent researchers have uncovered the existence of disinformation and propaganda rings that manage the activity of bots/trolls on social networks, particularly Twitter and Facebook.[43]

As reported by independent American outlet National Public Radio,[44] these networks or mechanisms revolve around Prince bin Salman, whereby "there were posts praising his social reform plan, Vision 2030. And then they also targeted enemies of Saudi Arabia, including Amnesty International, Al Jazeera, [and] regional foes like Iran" among other actors that pose a threat to the stability of the Saudi monarchy. One of the key episodes portraying the use of such a mechanism was the massive deployment of users (mostly bots and trolls) in the aftermath of the murder of journalist Jamal Khashoggi. Although Twitter and Facebook have taken steps to remove profiles that artificially spread this type of information, the disinformation and propaganda ecosystem continues to operate in favor of the Saudi monarchy.

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[41] Chaturvedi S. (2016), *I Am a Troll: Inside the Secret World of the BJP's Digital Army,* (New Delhi: Juggernaut Books), p. 133.

[42] Freedom House (2021b). Freedom in the world—2021: Saudi Arabia. Reports on the Middle East. https://freedomhouse.org/country/saudi-arabia/freedom-world/2020.

[43] National Public Radio (NPR) (2019, August 10). Inside Saudi Arabia's Disinformation Campaign. Weekend Edition Saturday. https://www.npr.org/2019/08/10/750086287/inside-saudi-arabias-disinformation-campaign.

[44] National Public Radio (NPR) (2019, August 10). Inside Saudi Arabia's Disinformation Campaign. Weekend Edition Saturday. https://www.npr.org/2019/08/10/750086287/inside-saudi-arabias-disinformation-campaign.

As witnessed in the comparative analysis, authoritarian governments' interest in dominating multiple aspects of social and political reality has impacted the way that social networks function. Instead of implementing free speech policies so that users can express their opinions and criticisms without restriction consequently generating a positive environment for discussion for any government with democratic credentials, anti-liberal governments seek to manipulate, influence, and/or restrict discussion on social networks for their political benefit.

The three countries analyzed reflect this phenomenon and, in theory, could be informative in understanding the case of Mexico. However, in the three cases mentioned above, a tangible link between government agents and the propaganda/disinformation machine has been confirmed, while in Mexico, this relationship has not yet been documented with hard evidence. The social media environment in Mexico shows a struggle between factions, and thus far, a connection between the government support network (known in Mexico as the *#RedAMLO*) and the government has not been verified. Finding such a connection would imply identifying a key actor in the López Obrador government who coordinates *#RedAMLO*, and thus would confirm a direct government intervention on social networks.

It is important to emphasize that while polarization in Mexico is nurtured and directed from the presidential podium, it is the people who have been the key actors in building this polarized ecosystem—an environment conducive to the dissemination of fake news and propaganda for or against the López Obrador administration. While not all of Mexican society has participated in the pro- and anti-López Obrador battle, society as a whole has witnessed this conflict-laden ecosystem, to which there seems to be no clear solution.

The following section presents the research methodology conducted by the TEC de Monterrey, as well as the strategy for obtaining the samples used to analyze the workings of Twitter in Mexico. This strategy allows us to detect if there is any indication of external influence on Twitter, to analyze the behavior of the groups in favor of and opposed to López Obrador, and to understand the strategic behavior of the messages they disseminate.

METHODOLOGY

This section aims to present the different techniques and data analysis used in each case study presented in this report. Details on the specific steps to achieve the results reported are explained in the corresponding section. For a deeper technical and operational understanding, please refer to the Computational Framework User's Manual developed by the Tec de Monterrey team that accompanies this research.[45]

1. The first undertaking was the collection and definition of the number of tweets on which to base the analyses. Two samples were established: 3,000 tweets and

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[45] The manual was sent on August 17, 2021, to all partners of this project coordinated by Global Americans.

20,036 tweets. These samples were generated from the 217,462 tweets that had been stored in the project's Relational Database (RDB) as of July 6, 2021.

2. Subsequently, two studies were conducted to search for possible involvement of foreign accounts in the dissemination of disinformation in Mexico, specifically from China and Russia. These were:

2.1. Linear regressions based on the sample of 3,000 tweets and the accounts related to their posts or dissemination.

2.2. Qualitative, to explore the most known and followed accounts that disseminate content linked to China; and quantitative, together with sentiment analysis (a technique provided in the computational framework developed for this research) to explore the profiles of the consumers of Chinese-generated content and identify some kind of polarization.

3. Finally, we studied the possible systematic strategies for disinformation and propaganda in Mexico. The response to this approach will be made through two levels of analysis: national and state (the case of the State of Mexico and Nuevo León):

3.1. National and State of Mexico case studies. A sample of 20,036 tweets and the following computational tools developed for the project were used:

3.1.1. **Sentiment analysis:** this tool was applied to each category (i.e., true, misinformation, disinformation, pro-government, anti-government, and unverifiable) to identify what feelings and emotions are reflected on average.

3.1.2. **Top accounts:** we sought to identify the most relevant accounts for each category, based on the number of retweets, followers, and frequency of tweets in the sample. With this analysis, we could identify the degree of influence-impact that these accounts have on Twitter.

3.1.3. **Tweet lifespan:** this tool helped us recognize how many hours on average tweets in each category last. For example, do tweets that share disinformation last longer or shorter than those classified as accurate?

3.1.4. **Network analysis**: by using this tool, we illustrate whether there is evidence of systematic and coordinated disinformation strategies as well as the links between the accounts that make them possible.

3.2. **State of Nuevo León case study**. This was a political event with a shorter timeframe and a smaller number of relevant actors than the COVID-19 issue, but it also generated polarization. For this study, the following computational tools were applied:

3.2.1. **Latent Dirichlet Analysis (LDA) topic modeling**: to analyze what happened with the main topics associated with each campaign.

3.2.2. **Sentiment analysis**: to explore the sentiments associated with each tweet based on keywords.

With this methodology we seek to explore possible foreign influence, specifically that of China and Russia, in the dissemination of disinformation in Mexico on issues related to COVID-19. We also seek to analyze the disinformation and propaganda ecosystem in Mexico in the context of the pandemic and the elections in Nuevo León.

The first phase of the methodology—definition and generation of random samples—is explained below.

Definition and collection of samples used in the analyses

To systematize the download of tweets, we defined a series of keywords related to COVID-19. This was done by monitoring Twitter trends on a daily basis. Based on this strategy, 152 queries made up of keywords and hashtags related to COVID in Mexico were created. Appendix A (Table 1) presents the data of these 152 queries used for our analyses. The two samples used in the analyses reported in this paper were drawn from these 152 queries.

The bulk download was scheduled to run from June 2021 to January 2020; we worked backward from the current data to the historical data on each of the defined queries. This strategy was implemented because, in order to download the historical data from Twitter in an optimal manner, we had to carry out a series of processes to gain access through Twitter's API, as well as implement new data collection techniques. (For further explanation, see Appendix A.) For the bulk download, we selected 131 of the 152 queries, due to the time constraints of the project. We plan to complete the analysis with the rest of the identified queries at a later date. In the current version, we use the queries identified as most relevant for the purpose of this study. The list of the 131 queries can be found in Table 1 of Appendix A (they are marked in blue for easier identification).

We generated the two samples used in the report (3,000 tweets and 20,036 tweets) on July 6, 2021. Starting from a universe of 217,462 tweets, the two samples were generated based on the criteria described in the following sections.

Sample of 3,000 tweets

Since the objective of the linear regression analysis was to identify those tweets that are influencing the dynamics of conversations on Twitter, we selected tweets that had at least 20 retweets. This allowed us to reduce the universe of analysis to a total of 7,174 tweets posted from December 2020 to June 2021.

The next step was to define how to analyze whether a tweet contains disinformation. A common strategy discussed in the literature is to analyze tweets containing links to certain URLs and determine which have been classified as sites with reliable or unreliable information by organizations dedicated to media analysis. However, we found two limitations: (i) there is a noticeable bias towards tweets in English, as these are media that have been studied by organizations dedicated to understanding the reliability of information (fact-checkers); and (ii) if these types of tweets account for about 40 percent of the data, thus, a bias is generated. Many tweets with possible misinformation could be found in the remaining 60 percent.

Ideally, we would analyze each of the tweets collected and verify whether they provide reliable information or not. However, due to resource constraints, this was not feasible. To overcome these limitations, we conducted a random sample. The randomization ensures that the results are reliable and are representative of the population studied.

While determining the number of tweets making up this random sample, we discovered the research of Hartmann et al. (2019), who reviews studies using automated techniques for text classification. We found that the literature refers to three sample sizes: 500; 1,000; and 3,000. Therefore, to perform the first of the two analyses to identify foreign influence, the team decided to sample 3,000 tweets.

Sample of 20,036 tweets

A second strategy was considered to ensure the robustness of our analysis. We decided to test the BERT-based classification algorithm on the universe of 217,462 tweets. (For more information on the accuracy of the algorithm, see Appendix B.) By applying this classifier, a pre-label was assigned to each tweet. For this purpose, as explained in the previous reports, a five-category classification was used: (A) true information; (B) misinformation; (C) disinformation; (D) tweets in favor of the Mexican government; (E) tweets against the Mexican government; and (F) unverifiable.

Moreover, to manually validate these automatic classifications, a second random sample was generated based on the following parameters: 99 percent confidence and interval +/- 0.865; yielding 20,036 tweets (out of a total of 217,462 tweets). The sample period is from August 2020 to June 2021.

Both samples were manually reviewed and classified by a group of experts through a peer review (double-check) to ensure the objectivity of this classification. The analyses of this study were based on this review.

Is there evidence of dissemination of disinformation in Mexico by Chinese and Russian accounts?

The first objective is to analyze the Twitter ecosystem in Mexico to identify possible signs of foreign influence in the discussion of the COVID-19 pandemic on social networks.

The global health crisis has generated uncertainty in public opinion, which has provided fertile ground for the dissemination of misleading information by domestic and foreign actors. The World Health Organization has issued numerous warnings of the need to limit the spread of false information about COVID-19.[46] Given this context, a two-way analysis was conducted to find evidence of foreign influence (in particular from China and Russia, major players in the international sphere) and explore the domestic ecosystem of disinformation and political use of social networks.

Fake news can be defined as fabricated information that mimics the content of established media outlets but lacks the editorial standards and processes to ensure the accuracy and credibility of the information.[47] In turn, "fake news" coexists with other types of disinformation phenomena, such as "misinformation," defined as inaccurate information disseminated not necessarily with a purpose or intention; and "disinformation," defined as false information disseminated intentionally to mislead people.[48]

Misinformation and disinformation can affect various aspects of our lives; from the way we understand and interact with our political context, to our interpersonal relationships, to issues that affect our most fundamental rights. These rights include the right to health, and in the context of the pandemic, information about nutrition and the use of vaccines.[49] Allcott and Gentzkow[50] show that one month before the 2016 election, for example, people in the U.S. saw on average between one and three fake news stories. About half of those who saw these stories reported that they believed them.

In this respect, there are important discussions about the possible influence of Russian accounts on the U.S. election.[51] The fact that evidence suggests that false information has a greater reach than accurate information is also concerning. Vosoughi et al.[52] find that on Twitter it takes at least six times longer for a true news story to reach 1,500 people compared to a fake news story.

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[46] "We're not just fighting an epidemic; we're fighting an infodemic," said Tedros Adhanom Ghebreyesus, Director-General of the World Health Organization (WHO) at a gathering of foreign policy and security experts in Munich, Germany, in mid-February, referring to fake news that "spreads faster and more easily than this virus." https://www.un.org/en/un-coronavirus-communications-team/un-tackling-infodemic-misinformation-and-cybercrime-COVID-19.

[47] Lazer, D. M., Baum, M. A., Benkler, Y., Berinsky, A. J., Greenhill, K. M., Menczer, F.,... & Zittrain, J. L. (2018). The science of fake news. Science, 359(6380), 1094-1096.

[48] In practice, there are those who claim that due to the difficulty of fully proving the intention of content and given that the false content disseminated can similarly affect the discussion of public opinion in social networks, it is possible to perform analyses combining both categories. However, following the parameters of previous research on the subject, these two categories are kept separately in this paper.

[49] Lazer, D. M., Baum, M. A., Benkler, Y., Berinsky, A. J., Greenhill, K. M., Menczer, F.,... & Zittrain, J. L. (2018). The science of fake news. Science, 359(6380), 1094-1096.

[50] Allcott, H., & Gentzkow, M. (2017). Social media and fake news in the 2016 election. Journal of economic perspectives, 31(2), 211-36.

[51] Golovchenko, Y., Buntain, C., Eady, G., Brown, M. A., & Tucker, J. A. (2020). Cross-platform state propaganda: Russian trolls on Twitter and YouTube during the 2016 U.S.presidential election. The International Journal of Press/Politics, 25(3), 357-389.

[52] Vosoughi, S., Roy, D., and Aral, S. (2018): The spread of true and false news online. Science, 359, 1146–1151.

Other international actors such as the World Health Organization have pointed out that the COVID-19 pandemic has been accompanied by an infodemic, an avalanche of information—some true and some not—that makes it difficult for people to access reliable sources of information.[53] The disinformation that arises from this infodemic can affect individuals' decisions and health—for example, rumors about possible home remedies for coronavirus and conspiracy theories that influence people's decision to get vaccinated.

It is important to mention the role played by social networks in the propagation of the infodemic. There is an increasing amount of literature that analyzes how fake news regarding COVID-19 is spread on Twitter.[54] However, most of this literature focuses on English-language news and developed countries such as the U.S. or European countries. Little is known about COVID-19-related disinformation on Twitter in other languages, or in countries with emerging economies or developing countries, and how this relates to the degree of disinformation presented in these countries. This is relevant if we consider that lesser-developed countries have faced the greatest difficulties in acquiring vaccines, combatting the pandemic, and reactivating their economies.

The present analysis examines the dissemination of information on Twitter related to COVID-19 in Mexico. In particular, it seeks to answer the following questions: (A) What is the magnitude of misinformation-disinformation in public discussion on Twitter related to COVID-19 in Mexico? (B) Is it true that misinformation-disinformation spreads at a faster rate than accurate information in Mexico? (C) Is public opinion polarized in Mexico about how the Mexican government has handled the pandemic? (D) Is there evidence of Twitter accounts related to China or Russia affecting the discussion about COVID-19 in Mexico? (E) What role do important stakeholders on Twitter, such as verified accounts, play in terms of the dissemination of information related to COVID-19 in Mexico?

To answer these questions, the 3,000 tweets were analyzed and classified into five categories: (A) true information; (B) misinformation; (C) disinformation; (D) tweets in favor of the Mexican government; (E) tweets against the Mexican government; and (F) unverifiable (i.e. comments or opinions that do not fall into the aforementioned categories). The findings of this analysis make several contributions to the discussion on the role of fake news dissemination on Twitter vis-à-vis COVID-19.

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[53] Mokhatri-Hesari, P., Moezzi, B., & Montazeri, A. (2020). "Infodemic, misinformation and the COVID-19." Payesh (Health Monitor), 19(3), 349-353.

[54] Cinelli, M., Quattrociocchi, W., Galeazzi, A., Valensise, C. M., Brugnoli, E., Schmidt, A. L.,... & Scala, A. (2020). The COVID-19 social media infodemic. Scientific Reports, 10(1), 1-10; Kouzy, R., Abi Jaoude, J., Kraitem, A., El Alam, M. B., Karam, B., Adib, E.,... & Baddour, K. (2020). Coronavirus goes viral: quantifying the COVID-19 misinformation epidemic on Twitter. Cureus, 12(3); Pérez-Dasilva, J. Á., Meso-Ayerdi, K., & Mendiguren-Galdospín, T. (2020). Fake news y coronavirus: detección de los principales actores y tendencias a través del análisis de las conversaciones en Twitter. Profesional de la Información, 29(3); Pulido, C. M., Villarejo-Carballido, B., Redondo-Sama, G., & Gómez, A. (2020). COVID-19 infodemic: More retweets for science-based information on coronavirus than for false information. International Sociology, 35(4), 377-392; Singh, L., Bansal, S., Bode, L., Budak, C., Chi, G., Kawintiranon, K.,... & Wang, Y. (2020). A first look at COVID-19 information and misinformation sharing on Twitter. arXiv preprint arXiv:2003.13907; Yang, K. C., Torres-Lugo, C., & Menczer, F. (2020). Prevalence of low-credibility information on Twitter during the COVID-19 outbreak. arXiv preprint arXiv:2004.14484.

Disinformation, COVID-19, and Twitter

The following section reviews studies that have analyzed the COVID-19 issue in terms of how false information has been spread on Twitter, the possible influence of accounts originating from China and Russia, the role of bots in the dissemination of information about COVID-19, and the role of verified accounts.

Singh et al. attempt to characterize the discussion around COVID-19 on Twitter based on the following criteria: languages used; myth spreading; and a comparison of the dissemination of reliable versus unreliable information.[55] Their period of analysis is from January 16 to March 15, 2020, using data collected from 2,792,523 tweets and 18,168,161 retweets through hashtags such as #ChinesePneumonia, #Corona, #Wuhan, #COVID, and #COVID_19. Their main findings were:

a)   The majority of tweets are in English (57 percent), followed by Spanish (11.6 percent).

b)   The ten most used words are China, people, cases, Wuhan, coronavirus, new, Chinese, who, virus, and confirmed.

c)   They analyzed the following five myths about COVID-19: coronavirus is a conventional flu; heat kills coronavirus; home remedies; origins of COVID-19; and myths about the existence of a hidden vaccine. Although they found that these myths grew during the period of analysis, they did not exceed 0.6 percent of the data.

d)   They found that 40 percent of the tweets contained a link to a URL. Among the top ten domains mentioned in the tweets were: YouTube; U.S. media (New York Times); Hong Kong English-language media (South China Morning Post); and retail sites (Amazon). YouTube plays a very important role in the dissemination of information: there were 100,000 tweets with links to YouTube vs. 13,678 links to the New York Times.

e)   Finally, they compared how information from high-quality sources (Centers for Disease Control and Prevention [CDC], U.S. government agencies, and well-known medical journals) is distributed versus low-quality sources (information sources detected by NewsGuard). The results show that credible sources comprise approximately 0.51 percent of the tweets and 0.04 percent of the retweets. A similar pattern occurs with less credible sources: 0.40 percent of tweets and 0.06 percent of retweets.

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[55] Singh, L., Bansal, S., Bode, L., Budak, C., Chi, G., Kawintiranon, K., Padden C., Vanarsdall R., Vraga E., ... & Wang, Y. (2020). A first look at COVID-19 information and misinformation sharing on Twitter. arXiv preprint arXiv:2003.13907.

Kouzy et al.[56] seek to understand the rate of disinformation on Twitter and the role verified accounts play in its dissemination. To do so, using data from February 27, 2020, they established 14 search criteria using hashtags such as #corona and terms such as "COVID-19." They also limited their analysis to tweets that had at least five retweets. From this data, they extracted a random sample of 673 tweets. Their findings show that:

a) 24 percent of tweets included disinformation. Additionally, 17 percent of the tweets were unverifiable (could not be categorized as false or true).

b) Unverified accounts were more likely to spread disinformation than verified accounts: 31 percent vs. 12.6 percent.

c) Finally, disinformation received a similar number of likes and retweets to that of true information.

Pulido et al.[57] try to analyze how false information, evidence-based information, and information based on fact-checking related to COVID-19 is disseminated. Their chosen period of analysis is from February 6 to 7. Using the word "coronavirus," they extracted a list of 17,988 tweets and selected the 1,000 tweets with the most retweets. Their results show that more tweets contain false information than evidence-based information, and there are more evidence-based information tweets than fact-checking tweets (9.7 percent vs. 4.78 percent vs. 0.85 percent). However, fact-checking tweets have a greater reach[58] than evidence-based tweets and false information (12,917 vs. 3,087 vs. 502).

Pérez-Dasilva et al. determined the ten most influential accounts in the discussion regarding COVID-19 on Twitter.[59] To do so, they analyzed two periods: January 23 to February 28, 2020, and February 28 to March 12, 2020. They found that the most influential accounts during the first period are six from the U.S. and four from Asia. Among the U.S. accounts is former President Trump. Concerning tweets from Asia, there exist accounts of two people from Hong Kong and two human rights activists in China who oppose Beijing. As for the second period, only Donald Trump remains in the top ten. They also found that two of the *top tweets* were supportive of the Trump administration and three were against it. In short, the authors identified the confrontation between narratives in favor and against the Republican government in the U.S., as well as the lack of actors posting about measures to prevent the pandemic or warning about the dissemination of false information.

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[56] Kouzy, R., Abi Jaoude, J., Kraitem, A., El Alam, M. B., Karam, B., Adib, E., ... & Baddour, K. (2020). Coronavirus goes viral: quantifying the COVID-19 misinformation epidemic on Twitter. Cureus, 12(3).

[57] Pulido, C. M., Villarejo-Carballido, B., Redondo-Sama, G., & Gómez, A. (2020). COVID-19 infodemic: More retweets for science-based information on coronavirus than for false information. International Sociology, 35(4), 377-392.

[58] Measured by the ratio of retweets over tweets.

[59] Pérez-Dasilva, J. Á., Meso-Ayerdi, K., & Mendiguren-Galdospín, T. (2020). Fake news y coronavirus: detección de los principales actores y tendencias a través del análisis de las conversaciones en Twitter. Profesional de la Información, 29(3).

Yang et al.[60] analyze the role of bots in the dissemination of low-credibility information. They studied two periods: March 9 to March 29, 2020, and February 1 to April 27, 2020. To determine if a tweet came from a bot account, they used the Botometer tool, which generates a score between 0 and 1, where a higher value indicates a higher probability of being a bot and not a human. They also used information from tweets that had links to low-credibility information sources and compared the evolution of these with that of more credible sources such as the New York Times and CDC. The results show that: (A) links to low-credibility sources accounted for 0.89 percent of the sample vs. 0.98 percent relating to links to the New York Times, or 0.65 percent relating to links to the CDC; (B) there exists no conclusive evidence that retweets of tweets containing links to low-credibility information are higher than those with high-credibility; (C) there is evidence that bots disseminate tweets with low-credibility information, and that a large volume of tweets was most likely generated by humans; and (D) evidence exists that several of the CDC retweets were generated by bots, suggesting that some of these bots also try to disseminate useful information.

Cinelli et al.[61] analyze the dissemination of questionable information regarding COVID-19 in conventional (Twitter and YouTube) and non-conventional (Gab and Reddit) media. The period of analysis was from January 1 to February 14, 2020. The search terms used were: *coronavirus; ncov; ncov-19; pandemic; and wuhan.* They selected a sample of 1,342,103 posts and 7,465,721 comments produced by 3,734,815 users. They used questionable tweets that included links to information classified as questionable by Media Bias/Fact Check. The results show the following: (A) the proportion of questionable news to trustworthy news varies depending on the platform: 0.05 on Reddit, 0.07 on YouTube, 0.11 on Twitter, and 0.70 on Gab and (B) the spread of questionable vs. non-questionable information spreads at the same rate on conventional social media such as Twitter and YouTube.

Thus, the empirical evidence reveals the following patterns:

1) There is evidence that questionable information is disseminated on Twitter, but this disinformation represents a low percentage of total information and is disseminated at similar rates to true information.

2) There is evidence to suggest the existence of a struggle between pro- and anti-government narratives (mainly towards the U.S.) on issues related to COVID-19 and its impact.

3) There is evidence to suggest that rumors about COVID-19, although low in number, grew over time. However, most of these studies cover very short periods; therefore, it could be important to know what the dynamics of fake news and rumors were like over a longer period of time.

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[60] Yang, K. C., Torres-Lugo, C., & Menczer, F. (2020). Prevalence of low-credibility information on Twitter during the COVID-19 outbreak. arXiv preprint arXiv:2004.14484.

[61] Cinelli, M., Quattrociocchi, W., Galeazzi, A., Valensise, C. M., Brugnoli, E., Schmidt, A. L. ,... & Scala, A. (2020). The COVID-19 social media infodemic. Scientific Reports, 10(1), 1-10.

4) No evidence was found that accounts from China or Russia are systematically affecting the conversation around COVID-19. However, a possible limitation is that these analyses were conducted in the early months of 2020. There may be a greater presence of accounts from China or Russia when the first studies on the effectiveness results of coronavirus vaccines from those countries were released.

5) We found evidence that bots, although low in numbers, do participate in the dissemination of information. However, they do so for both questionable and non-questionable information.

6) **Another important role player on Twitter is that of verified accounts.** Some studies suggest that verified accounts are less likely to spread fake news and, given their weight, can play a very important role in the fight against disinformation.

7) Much of the discussion has revolved around true information vs. disinformation. However, some studies are beginning to note the increase in unverifiable information. We know very little about the role of this type of information and how it can impact our decisions and public discussion.

8) The main methodology used to decide whether a tweet contains reliable information is through the URL links shared (it is estimated that 40 percent of tweets include a link to a URL). In turn, the reliability of the information in those URLs has been verified through organizations that analyze the quality of English-language media information. This methodology lowers the cost of manual fact-checking. However, this leaves a considerable percentage of tweets unexamined, through which unreliable information could be disseminated. Additionally, much of this verification is done for links to English-language media.

9) The types of audience targeted by each social network should be taken into account. On Twitter, the prevalence of disinformation related to COVID-19 is low. However, individuals may be looking for other networks where their beliefs can be confirmed and therefore, may be more susceptible to disinformation processes.

Empirical Strategy

To analyze the questions of interest, we generated a sample of 3,000 tweets, whose collection process is described in Section 4 of the report, and classified them into the following 5 categories: (**A**) true information; (**B**) misinformation (false information disseminated without intention to disinform); (**C**) disinformation (false information deliberately created and disseminated to disinform); (**D**) tweets in favor of the Mexican government; (**E**) tweets against the Mexican government; and (**F**) unverifiable (for example, comments or opinions that do not fall into the aforementioned categories).

We note that a tweet may fall into more than one category. For example, a tweet can have both true and anti-government information. [*Image I*] There may also be tweets attacking the government and spreading false information. *[Image II]*

La directora de @Conacyt_MX, @ElenaBuylla hizo el ridículo al decir que la vacuna a la que van a comprar la patente para llamarla Patria es "855% más barata".

Lo peor de todo es que ante el 🐶🐻 sigue el ejemplo de @lopezobrador_ y se aferra, en lugar de disculparse y rectificar

7:56 a. m. · 15 abr. 2021 · Twitter for iPhone
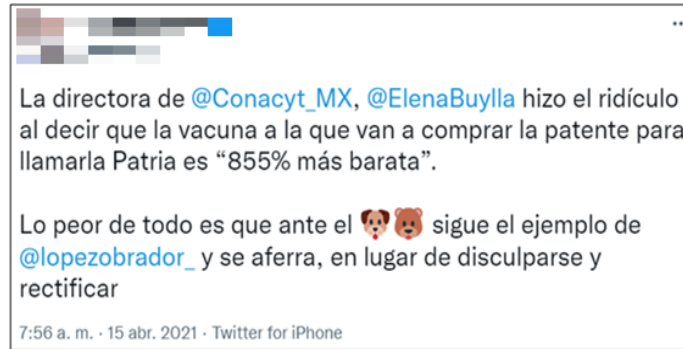
Image I: Example of true and anti-government tweet

"La Farmacéutica AstraZeneca incluirá trombosis en reacciones de su vacuna, el Vínculo entre la vacuna y coágulos pone en jaque la campaña global de vacunación" en tanto el imbécil e inepto de @HLGatell contesta "México seguirá utilizando vacuna AstraZeneca" @SSalud_mx @m_ebrard

10:32 a. m. · 8 abr. 2021 · Twitter for Android

Image II: Example of anti-government and disinformation tweet

Subsequently, we use the following ordinary least squares model:

$$Y_i = \alpha + \beta T_i + \gamma X_i + a_h + b_d + \gamma_m + v_y + e_i$$

where Y_i is the dependent variable, for example, the number of retweets. T_i is our independent variable of interest, for example, misinformation. X_i are variables that we will use as controls. We will include fixed effects at the time (a_h), day of the week (b_d), month (γ_m), and year (v_y). Finally, e_i represents an error parameter.

RESULTS

Most influential accounts

To understand the dynamics of the discussion around COVID-19, we identified the accounts that appeared most frequently in our sample. To do so, we selected those accounts that appeared at least ten times in the sample. The results are shown in Figure I. What we found is that 42 accounts meet this criterion and generated 1,422 of the tweets in the sample under analysis. In other words, approximately 40 accounts generated about 50 percent of the discussion content regarding the coronavirus.

A detailed analysis of these accounts shows that six belong to a state government,[62] three to media outlets,[63] and one to the federal government.[64] An important characteristic is that these accounts usually have high percentages of true information (91 percent or more). The only exception is CNN en Español, which has an 84 percent rate of truthfulness, but this is because 14.6 percent of its shared information was unverifiable.

Subsequently, we analyzed in greater detail the behavior of the accounts identified with misinformation to find accounts that systematically emit this type of content. From the sample of 3,000 tweets, we identified 130 tweets associated with misinformation. Most of the accounts (93 percent) posted only one tweet with disinformation. Seven accounts posted two tweets with misinformation, and only two accounts posted three tweets with misinformation. Of the nine accounts that posted more than one tweet with disinformation, none were among the 42 most influential accounts, suggesting that most misinformation does not come from accounts that generate this type of content consistently.

Evidence of China's and Russia's influence in the discussion on COVID-19 in Mexico

We took on the task of analyzing whether there is evidence of Russian and Chinese interference in the public narrative (via Twitter) of COVID-19 in Mexico.

We found no evidence of the presence of Chinese accounts or those linked to China working in a concerted manner to influence the public discourse of COVID-19 through Twitter. We only detected a tweet from the Chinese Embassy in Mexico that reported on the health protocols proposed by Beijing: "Since April 1, Beijing has started using mobile vaccination stations against #COVID_19 to speed up the process. Technologies such as 5G and big-data are employed to manage vaccination by digital means and ensure traceability of the entire process."[65]

In the case of Russia, we detected three tweets from the Russian Embassy in Mexico and 13 from ActualidadRT, a media outlet affiliated with the Russian government according to Twitter. The main topics addressed were related to the Sputnik V vaccine. However, we did not find evidence that they were tweets with disinformation. For example, this tweet from the Russian Embassy states that: "The Ministry of Health @SSalud_mx expects the first shipment of 200 doses of the Russian vaccine against COVID-19 @sputnikvaccine to arrive in Mexico next week. We invite you to read the article published in @El_Universal_Mx."[66] The following is another example of a tweet from ActualidadRT: "Tours to get vaccinated with Sputnik V in Russia. Tourists hope to arrive

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[62] @SaludEdomex, @SeducEdoMEx, @Edomex, @SecretariadoGEM, @jcedomex and @COBAEMex.

[63] @CNNEE, @lopezdoriga, and @AristeguiOnline.

[64] @SSalud_mx.

[65] @EmbChinaMex,Tweet link: https://twitter.com/EmbChinaMex/status/1380303049453760521.

[66] @EmbRusiaMexico, Tweet link: https://twitter.com/EmbRusiaMexico/status/1354527420557225984.

in Russia to get vaccinated with Sputnik V and not have to wait a long time for their turn to be vaccinated in their respective countries."[67]

In summary, we did not find evidence of systematic intervention by accounts from China in the discussion around COVID in Mexico. In the case of Russia, we found some activity on behalf of media such as ActualidadRT. However, the influence has not been through disinformation, but rather through messages that favored the Sputnik V vaccine.

Evidence of misinformation/disinformation and pro-/anti-government tweets

Table I presents the percentage of tweets we found with misinformation-disinformation. From the sample of 3,000 tweets, we only kept those that are clearly linked to Mexico. This is to have a better approximation of the disinformation and polarization around Mexico and the federal government. Therefore, the sample for the analysis was reduced to 2,256 tweets.

As mentioned above, each tweet was analyzed and classified as true, misinformation, disinformation, pro-government tweets, anti-government tweets, and unverifiable. The sum of these is not 100 percent as there may be tweets that, for example, are both misinformation and tweets in favor of or against the government.

An important finding is that 80.5 percent of the sample data is accurate news, and only 0.4 percent is misinformation and 4.3 percent is disinformation. In the case of government-related tweets, 3.5 percent of tweets are pro-government and 6.5 percent are anti-government. Finally, we found that 10.4 percent of tweets are unverifiable.

We also analyzed whether tweets associated with misinformation-disinformation have more likes, retweets, and replies than real news. We found that on average, fake news has more likes than real news (583 vs. 447) and more retweets (258 vs. 194), although it has fewer replies (36 vs. 41).

We also analyzed whether pro-government tweets have more likes, retweets, and replies than anti-government tweets. On average, pro-government tweets have fewer likes than anti-government tweets (385 vs. 974), fewer retweets (159 vs. 379), and fewer replies (36 vs. 45). However, in the section on "disinformation dissemination and pro-/anti-government tweets, we analyze if these differences are statistically significant using linear regression analysis.

Verified accounts must also be taken into account. It is estimated that less than one percent of accounts on Twitter are verified. However, we find that about 64 percent of the tweets in our sample come from verified accounts. One of the criteria in our sample is

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[67] @ActualidadRT, Tweet link: https://twitter.com/ActualidadRT/status/1383485409649250313

that the tweet has at least 20 retweets, which indicates that the role of verified accounts is very important in disseminating information that has a wider reach on Twitter. [Table I].

Evolution of misinformation/disinformation and pro/anti-government tweets over time

Another important issue to analyze is the evolution of disinformation, and of pro- and anti-government tweets, over time. Singh et al. found that although untrustworthy news tweets represented a low percentage, there are indications that the number grows over time.[68] Figure II presents the evolution of tweets classified as misinformation-disinformation throughout the period of analysis.

The evolution of tweets is stable in general, with the exception of peaks in January 2021 (40 tweets) and April 2021 (37 tweets). An increase is not evident. Figure III presents the evolution of tweets in favor and against the government. Peaks in anti-government tweets are observed in January 2021 (52 tweets) and April 2021 (53 tweets). A reaction of pro-government tweets is also observed during those same peaks in January 2021 (19 tweets) and April 2021 (20 tweets).

Dissemination of misinformation/disinformation and pro- and anti-government tweets

Table II analyzes whether it is true that fake news (misinformation-disinformation) has a higher number of likes, retweets and replies. The dependent variables are the number of likes, retweets, and replies, and the independent variable is a dichotomous variable that takes the value of 1 when the information is misinformation-disinformation and 0 when it is true. We use the following variables as controls: verified account; followers/following ratio; year; month; day of post; and time. Columns (1), (3), and (5) present the results without using controls. In columns (2), (4), and (6) we present the results using controls.

The results show that fake news has more likes (154), retweets (65), and fewer replies (4.7) than real news. However, these results are not statistically significant.

Table III presents the results concerning whether pro-government tweets have a higher number of likes, retweets, and replies. Again, the dependent variables are the number of likes, retweets, and replies. The independent variable is a dichotomous variable that takes the value of 1 if the tweet is pro-government and 0 when it is anti-government. The results show that pro-government tweets have fewer likes (722), retweets (220), and replies (9) with respect to anti-government tweets. The results are statistically significant for likes and retweets.

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[68] Singh, L., *et al.* (2020), A first look at COVID-19 information and misinformation sharing on Twitter.

This result should be approached with caution, since most of the tweets were generated in 2021. While it is possible that there is an atmosphere of anger against the government more than a year after the pandemic, this is not necessarily a reflection of the behavior in the first months of the pandemic, during which the behavior could have been more balanced between pro- and anti-government accounts.

Role of verified accounts

Table IV presents the results of the role of verified accounts in the dissemination of fake news and pro-government tweets. In this case, our dependent variables are dichotomous variables related to fake news (misinformation-disinformation) and pro-government tweets. Our independent variable is a dichotomous variable that takes the value of 1 when the account is verified and 0 otherwise. In this case, our control variables are: ratio of followers/following; year; month; day of post; and time. **The results show that if an account is verified, the probability that it spreads fake news decreases by 14 percent. Verified accounts do not seem to influence tweets in favor of the government.** [Tab. IV].

Discussion

One of the main research questions addressed by the literature is the prevalence of disinformation related to COVID-19 and the way it is disseminated on Twitter. Recent evidence suggests that disinformation is low and there is no evidence that it spreads faster than accurate information. This hypothesis seems to be confirmed for Mexico. Likewise, there is evidence suggesting that although disinformation represents a small percentage of tweets it is likely to grow over time.[69] For Mexico, we did not find such evidence. However, an important limitation is that our sample mainly covers 2021, and a substantial amount of rumors and false news about COVID emerged during the first months of the pandemic. Therefore, it is possible that our sample is not capturing that rising portion of the fake news curve.[70]

Furthermore, findings from the literature suggest the existence of a clash between the pro- and anti-government narratives. In the case of Mexico, we found evidence suggesting this phenomenon's presence. Another concern is the possible involvement of accounts from China and Russia in the spread of false information about the COVID-19 pandemic. **Preliminary findings do not show evidence of Chinese or Russian accounts**

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[69] Singh, L., et al., (2020), A first look at COVID-19 information and misinformation sharing on Twitter.

[70] An analysis will be conducted in the coming months that includes a sample covering the full period from January 2020 to June 2021.

systematically altering the debate.[71] It could be argued that the main incentives for influencing the debate around COVID occur at the end of 2020 when the discussion around the effectiveness of vaccines takes place. However, these studies do not analyze this period. Our work covers December 2020 to June 2021 and, as mentioned above, we found no evidence of accounts associated with Russia or China disseminating disinformation surrounding COVID-19. However, we did observe accounts connected to Russia promoting a narrative in favor of the Sputnik V vaccine.

Also, the literature addresses the role played by some actors (such as bots and verified accounts) in the dissemination of information. The literature shows that verified accounts are less likely to disseminate false information.[72] We found evidence that supports this hypothesis in the case of Mexico; however, we did not find evidence suggesting they play a role in the dissemination of information in favor of or against the government.

Conclusion

Based on this econometric strategy, the dissemination of information on Twitter related to COVID-19 in Mexico was analyzed. In particular, the following questions were addressed: (A) What is the magnitude of misinformation-disinformation in public discussion on Twitter related to COVID-19 in Mexico? (B) Is it true that misinformation-disinformation spreads at a faster rate than verifiable information in Mexico? (C) Is there a polarization of public opinion in Mexico around how the Mexican government has handled the pandemic? (D) Is there evidence of Twitter accounts related to China or Russia affecting the discussion around COVID-19 in Mexico? (E) What role do important stakeholders on Twitter, such as verified accounts, play in terms of the dissemination of information related to COVID-19 in Mexico?

Using a random sample running from December 2020 to June 2021, our results show that:

1) Only 4.7 percent of tweets are related to misinformation-disinformation, and we find no evidence that they have a higher level of dissemination (measured by likes, replies, and retweets) than accurate information. This confirms recent

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[71] Cinelli, M., Quattrociocchi, W., Galeazzi, A., Valensise, C. M., Brugnoli, E., Schmidt, A. L.,... & Scala, A. (2020). The COVID-19 social media infodemic. Scientific Reports, 10(1), 1-10; Kouzy, R., Abi Jaoude, J., Kraitem, A., El Alam, M. B., Karam, B., Adib, E.,... & Baddour, K. (2020). Coronavirus goes viral: quantifying the COVID-19 misinformation epidemic on Twitter. Cureus, 12(3); Pérez-Dasilva, J. Á., Meso-Ayerdi, K., & Mendiguren-Galdospín, T. (2020). Fake news y coronavirus: detección de los principales actores y tendencias a través del análisis de las conversaciones en Twitter. Profesional de la Información, 29(3); Pulido, C. M., Villarejo-Carballido, B., Redondo-Sama, G., & Gómez, A. (2020). COVID-19 infodemic: More retweets for science-based information on coronavirus than for false information. International Sociology, 35(4), 377-392; Singh, L., Bansal, S., Bode, L., Budak, C., Chi, G., Kawintiranon, K.,... & Wang, Y. (2020). A first look at COVID-19 information and misinformation sharing on Twitter. arXiv preprint arXiv:2003.13907; Yang, K. C., Torres-Lugo, C., & Menczer, F. (2020). Prevalence of low-credibility information on Twitter during the COVID-19 outbreak. arXiv preprint arXiv:2004.14484.

[72] Kouzy, R., et al. (2020), Coronavirus goes viral: quantifying the COVID-19 misinformation epidemic on Twitter.

evidence suggesting that COVID-19-related disinformation represents a low proportion with no evidence that it spreads faster than accurate information.[73]

2) We found evidence of polarization around the way the federal government has handled the pandemic with about 10 percent of the tweets: 3.5 percent in favor, and 6.5 percent against. Therefore, this work product presents evidence that supports the hypothesis of the existence of a narrative polarization both for and against how governments have handled the crisis generated by the pandemic.

3) We found no systematic evidence of accounts associated with China or Russia spreading misinformation-disinformation regarding COVID-19. However, we did find evidence of Russian-associated accounts disseminating a narrative in favor of the Sputnik V vaccine. We found no evidence that accounts from China or Russia have systematically altered the conversation using disinformation.[74]Concerning relevant actors on Twitter, we found that approximately 50 percent of the tweets in the sample were generated by only 42 actors. Likewise, we found evidence that if an account is verified, the probability of issuing misinformation-disinformation decreases by 14 percent. In this regard, the literature shows that verified accounts are less likely to disseminate false information.[75] We find evidence that supports this hypothesis in the case of Mexico.

Finally, to the best of our knowledge, this is one of the first papers to analyze the spread of fake news about COVID-19 on Twitter in a language other than English.

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[73] Cinelli, M., Quattrociocchi, W., Galeazzi, A., Valensise, C. M., Brugnoli, E., Schmidt, A. L.,... & Scala, A. (2020). The COVID-19 social media infodemic. Scientific Reports, 10(1), 1-10; Kouzy, R., Abi Jaoude, J., Kraitem, A., El Alam, M. B., Karam, B., Adib, E.,... & Baddour, K. (2020). Coronavirus goes viral: quantifying the COVID-19 misinformation epidemic on Twitter. Cureus, 12(3); Pérez-Dasilva, J. Á., Meso-Ayerdi, K., & Mendiguren-Galdospín, T. (2020). Fake news y coronavirus: detección de los principales actores y tendencias a través del análisis de las conversaciones en Twitter. Profesional de la Información, 29(3); Pulido, C. M., Villarejo-Carballido, B., Redondo-Sama, G., & Gómez, A. (2020). COVID-19 infodemic: More retweets for science-based information on coronavirus than for false information. International Sociology, 35(4), 377-392; Singh, L., Bansal, S., Bode, L., Budak, C., Chi, G., Kawintiranon, K.,... & Wang, Y. (2020). A first look at COVID-19 information and misinformation sharing on Twitter. arXiv preprint arXiv:2003.13907; Yang, K. C., Torres-Lugo, C., & Menczer, F. (2020). Prevalence of low-credibility information on Twitter during the COVID-19 outbreak. arXiv preprint arXiv:2004.14484.

[74] Cinelli, M., Quattrociocchi, W., Galeazzi, A., Valensise, C. M., Brugnoli, E., Schmidt, A. L.,... & Scala, A. (2020). The COVID-19 social media infodemic. Scientific Reports, 10(1), 1-10; Kouzy, R., Abi Jaoude, J., Kraitem, A., El Alam, M. B., Karam, B., Adib, E.,... & Baddour, K. (2020). Coronavirus goes viral: quantifying the COVID-19 misinformation epidemic on Twitter. Cureus, 12(3); Pérez-Dasilva, J. Á., Meso-Ayerdi, K., & Mendiguren-Galdospín, T. (2020). Fake news y coronavirus: detección de los principales actores y tendencias a través del análisis de las conversaciones en Twitter. Profesional de la Información, 29(3); Pulido, C. M., Villarejo-Carballido, B., Redondo-Sama, G., & Gómez, A. (2020). COVID-19 infodemic: More retweets for science-based information on coronavirus than for false information. International Sociology, 35(4), 377-392; Singh, L., Bansal, S., Bode, L., Budak, C., Chi, G., Kawintiranon, K.,... & Wang, Y. (2020). A first look at COVID-19 information and misinformation sharing on Twitter. arXiv preprint arXiv:2003.13907; Yang, K. C., Torres-Lugo, C., & Menczer, F. (2020). Prevalence of low-credibility information on Twitter during the COVID-19 outbreak. arXiv preprint arXiv:2004.14484.

[75] Kouzy, R., Abi Jaoude, J., Kraitem, A., El Alam, M. B., Karam, B., Adib, E.,... & Baddour, K. (2020). Coronavirus goes viral: quantifying the COVID-19 misinformation epidemic on Twitter. Cureus, 12(3).

There are two limitations to the present study. The results presented here come from descriptive statistics and correlations, so they should not be interpreted as causal findings. Another important factor to consider is the timeframe of the study. Although analyzing the period from December 2020 to June 2021 allowed us to capture data from a timeframe during which there was greater discussion regarding vaccines, we do not cover data from the first months of the pandemic when there was likely a greater discussion regarding myths related to the coronavirus. Finally, an area of opportunity for this study is to identify the role of bots in the dissemination of misinformation-disinformation and pro- and anti-government tweets.

In terms of public policy, the data show that discussion on Twitter is mainly influenced by a relatively small number of accounts. Among these, verified accounts play an important role in limiting the spread of false information. Given the reach of these accounts, one strategy to explore would be to coordinate with these accounts to address fake news when it is detected on Twitter. However, one should be wary of unintended consequences. For example, Twitter users may feel that it is a coordinated campaign and thus object to the information disseminated.

The consequences of the Twitter discussion being determined by a small number of accounts should also be examined. There may be a self-selection process where individuals migrate to social networks where they feel that there is information more in line with what they believe and where they feel more included. This can generate biases in the information received by individuals and can lead them to make decisions that can directly affect their health, such as not getting vaccinated.

Analysis of specific accounts linked to China: cultural diplomacy through Twitter?

Based on a qualitative analysis, our team identified the most relevant Twitter accounts related to China that disseminate content in Spanish targeted at a Latin American audience. Most of the accounts are official Chinese media channels in the region. The list of Twitter accounts is as follows: @CELE_CONFUCIO, @confuciomag; @Cechimex_UNAM; @chinachambermx; @ChinaServiceMex; @MEXCHAMChina; @EmbChinaMex; @cgtnenespanol; @ChinaenAL; @XHespanol; and @cctvenespanol. This list of accounts was constructed using the *snowball method* to identify the connections and news of official Chinese Spanish-language media outlets from their users in common and shared posts. Once an account was identified, we followed the network of tweets and retweets to find other accounts related to those same users.

The contents of these eleven accounts were examined qualitatively. Three accounts associated with official Chinese media and with the highest number of followers and tweets were identified: @XHespanol; @cctveenespanol and @cgtenespanol. China Xinhua Español (@XHespanol) has 116,000 followers and is the Spanish-language account of the official Xinhua news agency. CCTV Español (@cctveenespanol) is an account with 16,000 followers dedicated to disseminating content from China. CGTN en Español (@cgtnenespanol) is an international media organization linked to the Chinese

government with 590,000 followers. A qualitative analysis of the contents of these three accounts was carried out by exploring their timeline and interaction with their followers.

The qualitative analysis explored three weeks of content (April 5-25) generated by the above accounts and found no clear evidence of disinformation campaigns, polarization, or dissemination of pro-China propaganda. It is difficult to classify the contents of these accounts under a single label, but we can claim with a good degree of certainty that the posts are about cultural and economic diplomacy, as well as some pro-China propaganda.

However, the propaganda is very limited and is on the borderline of distinction between propaganda or social communication of government activities. Below is a screenshot of two recent examples of the type of content shared by the accounts analyzed in Figures 3 and 4, to illustrate that the contents are more in line with cultural diplomacy messaging or social communication than political propaganda.

Figure 3. *Content from CGTN en Español. Source: Twitter*

Figure 4. *Content from China Xinhua Español. Source: Twitter*

The fact that we did not find any obvious information from these Twitter accounts concerning propaganda and dissemination of fake news, led us to conduct a more thorough and quantitative analysis of users interacting with this content. The objective was to identify the type of posts and content generated by the followers of these media. Using the analysis framework developed in this research, we downloaded data from 741,572 Twitter users who follow these eleven accounts. Table 2 illustrates the descriptive statistics for the number of followers, the number of accounts followed, and the number of tweets written by the followers of the eleven Chinese accounts.

Table 2. Descriptive statistics of followers of the eleven accounts that disseminate information about China in Spanish.

Statistic	Followers Count	Following Count	Tweet Count
Average	724.7	906.8	4038.7
Medium	37	389	124
Mode	0	63	0
Standard Deviation	31,530	7,402	23,572
Minimum	0	0	0
Maximum	9,044,696	4,233,508	7,556,857
Count	741,572	741,572	741,572

The median number of accounts that these 741,572 accounts follow on Twitter is 389, with a median of 37 followers and a median of 124 tweets. Several accounts correspond to digital media outlets and exhibit atypical behavior: accounts with millions of followers and millions of accounts following them. The large difference between the median and the average indicates that this is a completely right-skewed sample; the vast majority of accounts have less than 100 followers and follow less than 500 accounts. However, there are a few outlier accounts that belong to mass and digital media.

The next step in mapping users that interact with content from Chinese media accounts was to generate a random sample for analysis. It is not possible to explore the timelines of the 741,000 accounts associated with the eleven Chinese accounts because of the sheer size and scope. Thus, we chose to select a random sample of one percent of the accounts, taking 7,415 accounts as a sample and downloading their activity over three months: from February 2 to April 28, 2021. That way, the tweets from the timelines of the selected accounts during the specified period were downloaded; the total number of tweets was 15,287. Sentiment analysis was conducted on these tweets.

Figure 5 presents some of these results, plotting two dimensions of sentiment analysis to contrast positivity and negativity. Positivity refers to a set of words denoting positive feelings such as joy, hope, and confidence. Negativity is associated with sets of words that relate to feelings of distrust, sadness, and pessimism. A higher positivity or negativity score means that a tweet is more strongly associated with that positive or negative sentiment. The graph represents each of the 15 thousand tweets as points on these two dimensions.
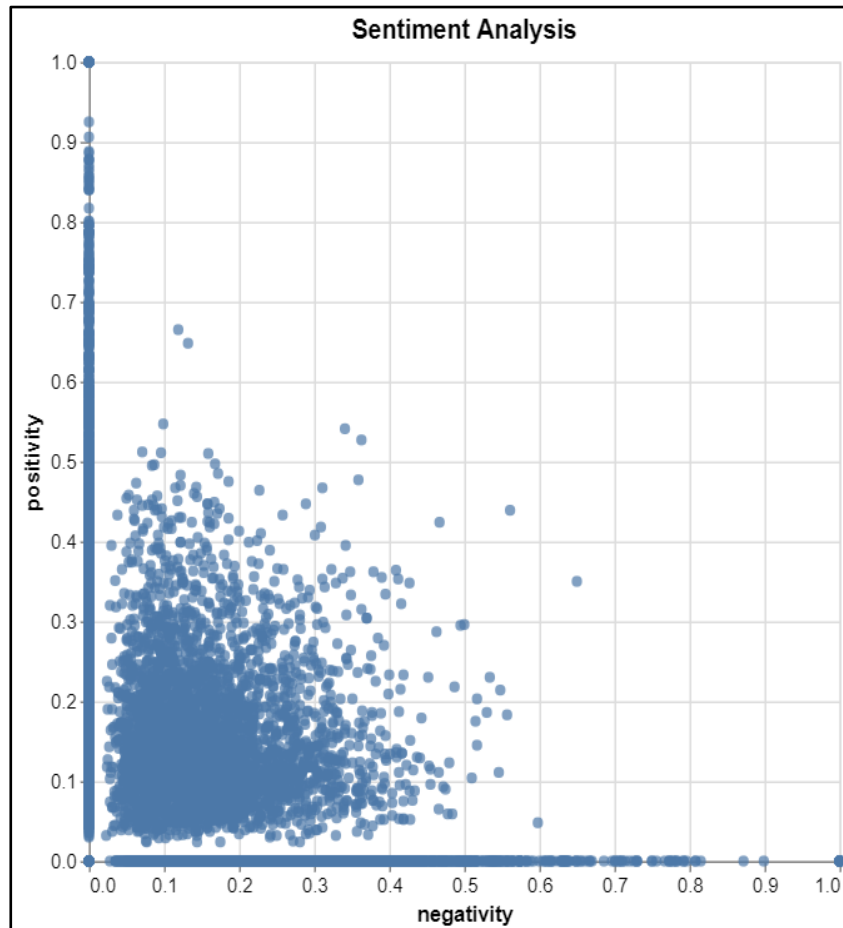
Figure 5. Sentiment analysis. Source: Authors' own elaboration

Overall, the average negativity score is 0.09, neutrality is 0.79 and positivity is 0.11. The descriptors indicate that most of the posts shared by these accounts engaging with Chinese content are neutral or positive. There are few negatively charged posts. Another way to see this phenomenon is through the compound dimension of sentiment analysis. The composite or "compound" measure is a score from -1 to 1, where -1 indicates the highest degree of negativity and 1 of positivity. Values close to 0 denote neutrality. Figure 6 is a histogram with a density curve showing the distribution of this composite measure to explore the distribution of this score across the 15,000 tweets.
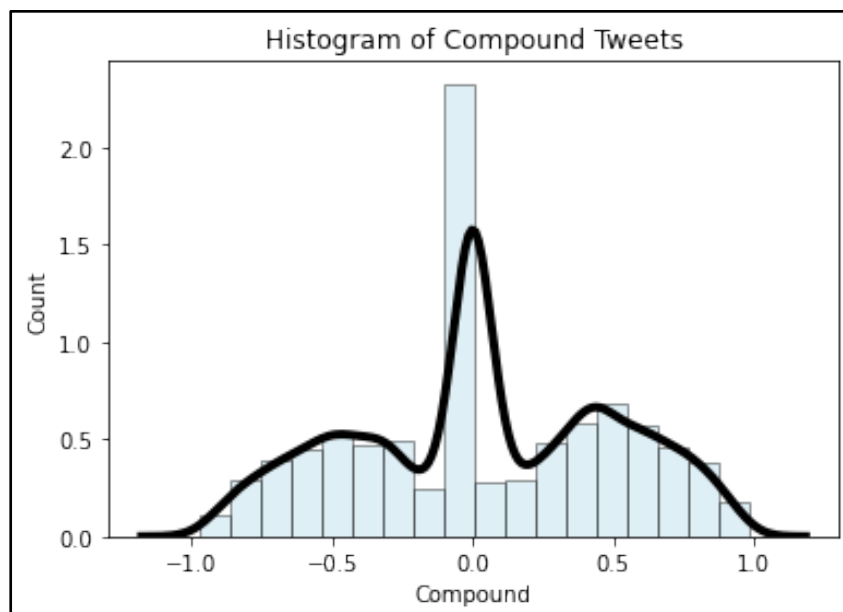
Figure 6. Histogram of the composite or "compound" measure of sentiments (-1 denotes negativity, 0 neutrality, and 1 positivity). Source: Authors' own elaboration

The histogram confirms that the highest density of tweets is presented in the score with a value of 0. The average compound measure of the 15,000 tweets is 0.04. Most of the content of these accounts is neutral. Less than 10 percent of the content is located at the extremes of the scale.

In conclusion, the exercise carried out in this section explored the most well-known and followed accounts that disseminate content linked to China. Eleven Twitter accounts were selected. We concluded that the eleven accounts disseminate content linked to Chinese social communication or cultural diplomacy. Thus, the following analysis consisted of exploring the profiles of users interacting with the content generated by these Chinese accounts to identify some kind of polarization. Their follower count was analyzed, as was the sentiment of their shared content.

The result was that the content they share is mostly neutral. There is a minority of clearly positive and negative content, but it is not possible to associate it with a distinct account or pattern. It was not possible to identify polarization or any systematically atypical element in the content of the Chinese media accounts, or their followers and users interacting with their posts.

These results lead us to analyze in greater depth whether there are systematic strategies of disinformation and domestic propaganda in Mexico. For this reason, three analyses are carried out on Mexico: the first studies the national behavior around COVID-19; the second studies the subnational case of the State of Mexico; and the third examines the elections in Nuevo León.

Is there evidence of systematic disinformation and propaganda strategies in Mexico?

National case study

Visualizing information in a variety of ways is fundamental to understanding complex environments, such as social networks (in this particular case, Twitter). The importance of *graph* or network visualization has been extensively documented in the analysis of complex problems throughout history. "

In the first part of this section, we present the utility of representing the lifespan of general social network activity in the context of a series of specific queries in a sample of 20,036 tweets. This is followed by a methodical process of visualizing the different topographies of Twitter networks.

The second and third sections summarize the process, findings, and preliminary implications of the two nodes with the greatest centrality in the sample being analyzed: @alfredodelmazo and @lopezobrador_. When analyzing the way these two nodes operate, two perceptions emerge. First, the alleged use of social networks coordinated by users with suspicious behavior on behalf of the administration of Alfredo del Mazo, governor of the State of Mexico. Second, examples of political antagonism and polarization around the handling of the pandemic by the government of Andres Manuel López Obrador (AMLO), President of Mexico. To this end, we present a segmented and aggregated influence classification per user and tweet. This section highlights the importance of identifying the main users with the greatest potential for influence and the tweets that illustrate the different intentions and emotions relevant to this study.

In this regard, we propose a taxonomy across two categories:

1. **Intentions:** based on pro-government, anti-government, disinformation, and misinformation labels.

2. **Emotions:** based on the compound sentiment analysis that was conducted as part of the technological tool.

This taxonomy and information provide an overview of how the network of seemingly coordinated efforts to support the government of the State of Mexico and the actors polarizing the public conversation at the federal level function. Two groups (one for and one against the AMLO government) are identified, and some of their interactions and behaviors regarding the government's handling of the pandemic are presented. The process revealed how the use of disinformation and misinformation does not play a leading role in this sample. However, we reflect on how the radicalization of ideas and emotions could increase the use of disinformation and misinformation in the future. Finally, we present a set of implications, conclusions, and recommendations in the fourth section.

Network topographies and taxonomies

To better understand the different intentions and emotions behind the publication of these tweets, network visualizations and graphs representing their topographies at different levels are used to improve the understanding of user dynamics on Twitter. Topographies are relevant because they operate as a starting point to create taxonomies. The classification of users into suspicious accounts, rankings, tweets, intentions, and emotions is useful for studying their behavior. It is also used to apply computational techniques to progress towards a systematic and analytical approach to dealing with a complex network and to understanding the mechanisms used by its actors to disseminate information (organically or artificially).

Furthermore, organizing and assigning behavioral labels to specific users and tweets can create a shared and constantly evolving vocabulary to generate productive discussion on how to approach systematic analysis of a network in inter- and cross-disciplinary groups, which is vital to the study of social networks. This examination shows how the sample is modeled by a set of nodes (social network users) connected by edges (relationships) that form patterns. These patterns function as clues that help to track users who have intentions that may respond, for example, to political interests or polarize the public conversation.

The network topographies we will look at in this section primarily analyze the two nodes with the highest centrality that are part of a sample of 20,036 tweets, extracted from April 1, 2020, to June 1, 2021, using the following search terms.

Topography (Big picture)

The first step was to gain a high-level view of the network, similar to a satellite image, that visualizes all users and tweets as nodes, and all interactions between nodes as connections. These connections can be tweets, mentions, or replies. This information forms the first *zoom* level of the network topography. The first three zoom levels of the network and the information detected are presented below:

- Zoom level 1.

Allows rapid detection of users with higher centrality, which is measured by the number of connections (interactions) of each node.
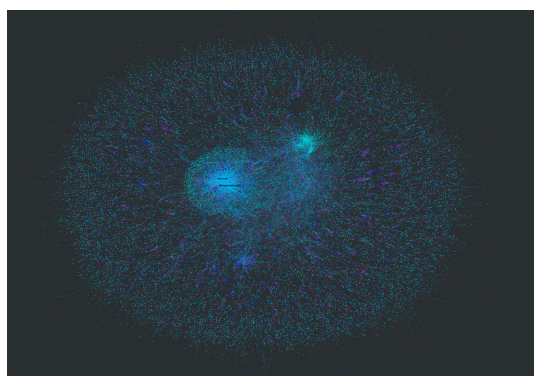
Visualization of the sample in Gephi v0.9.2. The nodes represented in the image are as follows (by color): light blue = Twitter users; dark blue = tweets with positive compound value; purple = tweets with neutral compound value; and red = tweets with negative compound value. The connections represented in the image are (by color): purple = link or tweet; light blue = mention; green = reply to tweet.

The image quickly identifies the users with the highest centrality, which is defined as the number of connections (interactions) of each node. In this network consisting of replies, tweets, and mentions, two main nodes can be identified:

1. Alfredo del Mazo @alfredodelmazo

2. @Ssalud_mx and @lopezobrador_

To view the network in high resolution, click here.

- Zoom level 2 (Communities-modularity).

Allows nodes to be organized by affinity between groups (communities) in the network.
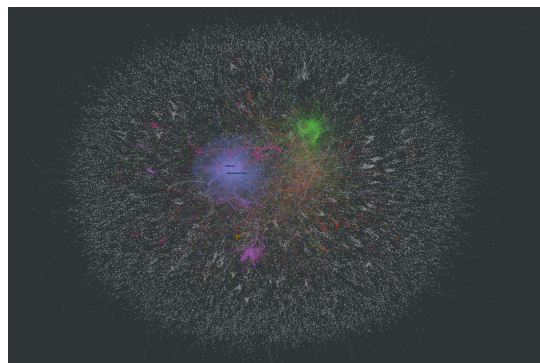
Visualization of the sample in Gephi v0.9. The colors represent the communities detected with the Modularity algorithm evaluated with a value of Resolution = 1.0.

At this zoom level, you can see the nodes organized (in color) by the affinity between groups (communities) in the network, and grouped together by topics and interactions.

Note: A detailed explanation of how the Modularity algorithm works can be found in the third report. To view the network in high resolution, click here.

Sentiment and lifespan analysis of the sample of 20,036 tweets

The analysis of the network topology helped us comprehend the mechanisms used to disseminate news on Twitter and the relationship that exists between this dissemination and communities in the social network. Unlike the previous analysis, the section below describes an analysis of the mechanisms for dissemination in terms of time instead of the topology of connections in the network. We delve into the temporal diffusion patterns of a tweet in the network based on retweets from other users. The analysis of temporal

patterns is important because it identifies the extent to which content spreads through retweets from one account or several until it reaches a larger audience. The temporal analysis of the number of retweets is called lifespan analysis because it graphically represents the number of people and followers that a tweet reaches, based on the number of retweets that grant followers over time.

Of the sample of 20,036 tweets referred to above, 99 percent did not have any retweets. Therefore, tweets with more than one retweet were analyzed. Due to lack of space, it is not possible to include all the lifespans analyzed. However, 200 lifespans were analyzed that correspond to posts with more than one retweet. The analysis of the 200 lifespans is available upon request. In this section, we present a selection that is representative of the lifespan dynamics observed. We then present an illustrative example of each of the five content categories previously described.

Anti-government content lifespan

Example 1. Tweet text: **"I see that teachers have been vaccinated with Cansino vaccines and that they are effective for only 6 months. What a way to give false promises through a syringe. #TheyveAlreadyLostBecauseIWillVote"** [Original in Spanish: "Veo que todas las vacunas con las que se ha vacunado a los maestros son Cansino y que son efectivas solo por 6 meses. Que manera de dar atole en jeringa. #YaPerdioPorqueYoVotare"]

This example is about a tweet that claims that the vaccines given to teachers were from the Chinese pharmaceutical company CanSino and that they have an effectiveness of only six months. The expression "dar atole en jeringa" used in the original tweet is an idiom that indicates that this was a government hoax. **Figure 7** represents the ten accounts with the highest number of followers (the most influential) that retweeted this post. The bar histogram represents the number of followers of each of these accounts.
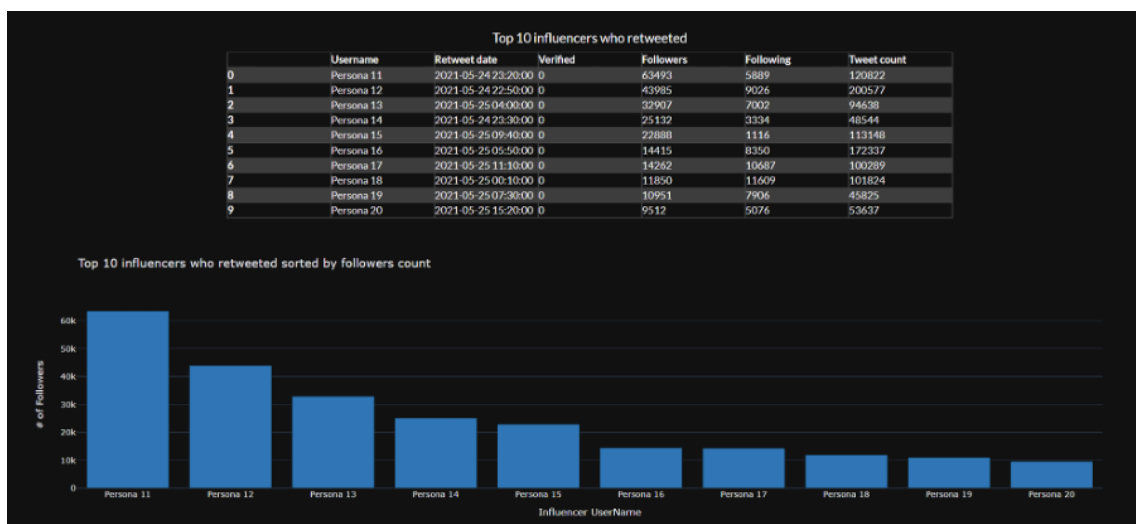
Figure 7. The ten most influential accounts that retweeted the post that serves as an example of anti-government content. Source: Authors' own work

The ten accounts with the highest number of followers that retweeted the post used in this example are Person 11, Person 12, Person 13, Person 14, and Person 15. The following

figure links the temporal coincidence between these accounts to the effect of the retweets. **Figure 8** represents the temporal evolution on the horizontal axis with the indicative date and time of the event, measured at a 10-minute frequency. The vertical axis on the left side shows the number of retweets that occurred along a 10-minute timespan. The lines correspond to this left-side vertical axis. The vertical axis on the right side corresponds to the points represented on the graph, which are the accounts linked to the lifespan of the tweet and mark the time when they retweeted. The vertical scale on the right side includes the number of followers of the accounts represented by the dots.
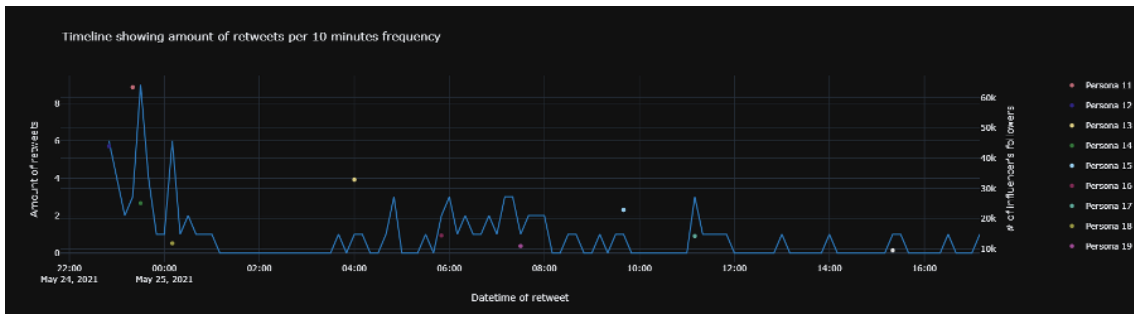
Figure 8. *Lifespan of the number of retweets per 10-minute frequency and most influential accounts that retweeted the example of anti-government content. Source: Authors' own work*

In the example shown in **Figure 8,** we can see that the tweet was posted around midnight. Shortly after it was posted, the account of Person 12, with about 25,000 followers, retweeted it. This led to a greater number of retweets that immediately followed. The peak was reached when Person 11, with 60,000 followers, retweeted again. The activity declined in the early hours of the morning. However, the following day, the tweet had between 1 and 2 retweets every ten minutes from the morning until it died out around 6:00 p.m. that day.

It is noteworthy that the highest level of activity was reached in the first two hours after the tweet was posted, and that the following day it continued with moderate and constant frequency until it died out. In this case, the Person 11's and Peron 12's retweets were important for the tweet's survival and to generate a cascading effect so that it could reach a larger audience and gain more retweets the following day. **Figure 9** represents the cumulative number of followers of the accounts that retweeted the original tweet throughout the lifespan. The peak in the graph reflects when Person 11 retweeted the post.
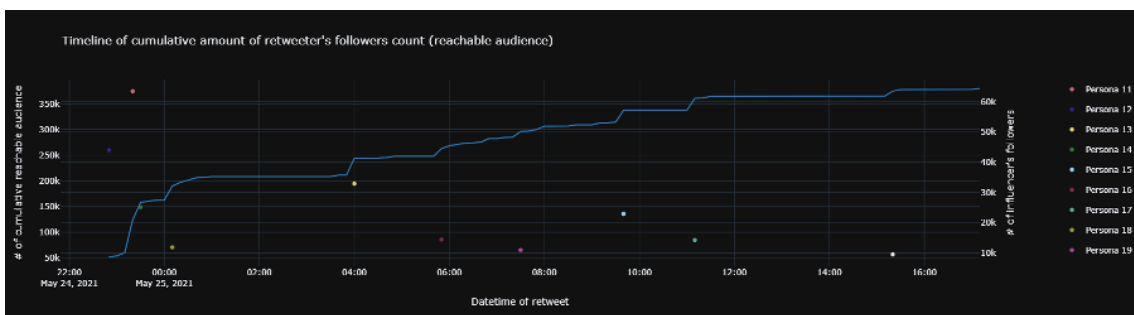
Figure 9. *Cumulative number of followers of accounts that retweeted the post serving as an example of anti-government content. Source: Authors' own work*

The example below corresponds to a tweet that was classified as disinformation. The content and lifespan are representative of the cases examined under this label.

Disinformation content lifespan

Example 2. Tweet text: "Russia's top pulmonologist resigns over "serious violations" of medical ethics in the development of Sputnik V vaccine against coronavirus #RecommendedReading" [Original in Spanish: "El principal neumólogo ruso renuncia por "violaciones graves" de la ética médica en el desarrollo de la vacuna Sputnik V contra el coronavirus #LecturaRecomendada"]

The example text is fake, claiming that the leading Russian pulmonologist resigned from his position in protest against ethical violations in the development of the Sputnik V vaccine. It also implies that the Russian vaccine is unreliable and should not be used. Below, we examine its dynamics of dissemination in the network. [*Fig. 10*]
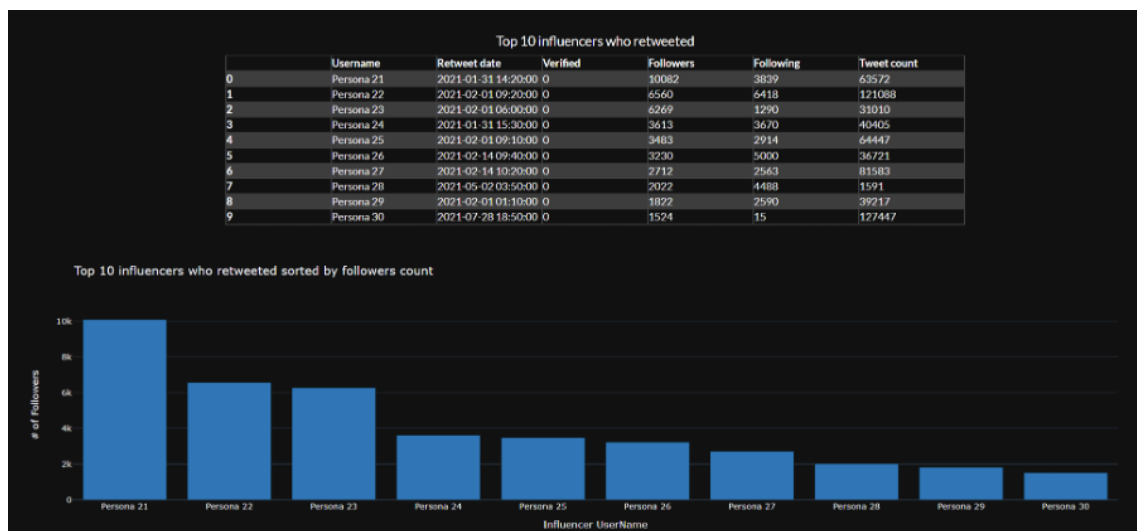
Figure 10. *The ten most influential accounts that retweeted this example of disinformation content. Source: Authors' own work*

The account with the highest number of followers that retweeted this example was Person 21 (10,000 followers), followed by Person 22 (6,560 followers) and Person 23 (6,269 followers). Below, we observe the relationship between the retweets by accounts with the highest number of followers and the content's reach.
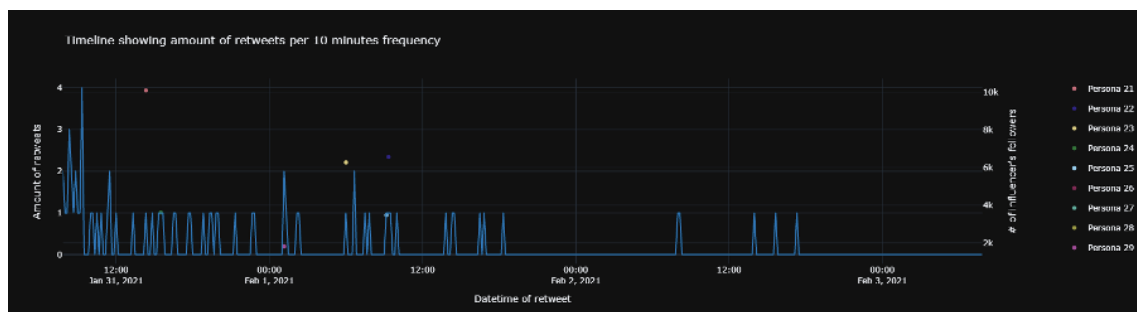
Figure 11. Lifespan of the number of retweets per 10-minute frequency and most influential accounts that retweeted disinformation content. Source: Authors' own work

Figure 11 shows that the tweet had a series of major retweets in the first two hours after its publication. Subsequently, the first relevant account that retweeted was Person 21 (10,000 followers). However, this did not have a significant effect and the pattern of retweets remained steady. In this case, the retweeting of accounts with many followers did not seem to have a considerable effect as it did in the previous example of anti-government content.
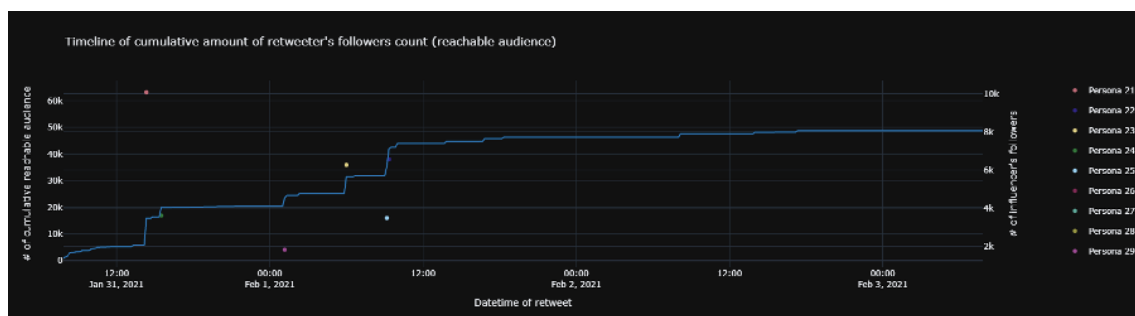
Figure 12. Cumulative number of followers of accounts that retweeted, by date and time of retweet. Example of disinformation content. Source: Authors' own work

Figure 12 shows that the accumulated number of followers increases at a steady pace without showing a jump in the number of retweets due to the influence of accounts with many followers. The third example below reflects pro-government content.

Pro-government content lifespan

Example 3. Tweet text: "Mexico is one of the first 10 countries to get the #vaccine against #Coronavirus. International Relations expert [@expert01] explains that we have this resource because it is not being wasted, we are not giving away chayote, taxes are being paid." (The expression "giving away chayote" or "dando chayote" used in the original tweet is an idiom that refers to the government incentivizing or bribing journalists to cover/prioritize a news story.) [Original in Spanish: "México es uno de los 10 primeros países en obtener la #vacuna contra el #Coronavirus. El experto en Relaciones Internacionales [@expert01] nos explicó que se tiene el recurso porque no se está dilapidando, no se está dando chayote, se pagan impuestos"]

The tweet in Example 3 is favorable to the Mexican government because they quote of an expert who states that Mexico was one of the first countries to acquire vaccines, due to the sound management of public finances. The ten accounts with the most followers who retweeted this post were sportswriter 3 (with more than half a million followers) and Person 32 (with almost 18,000 followers). [***Fig. 13***]
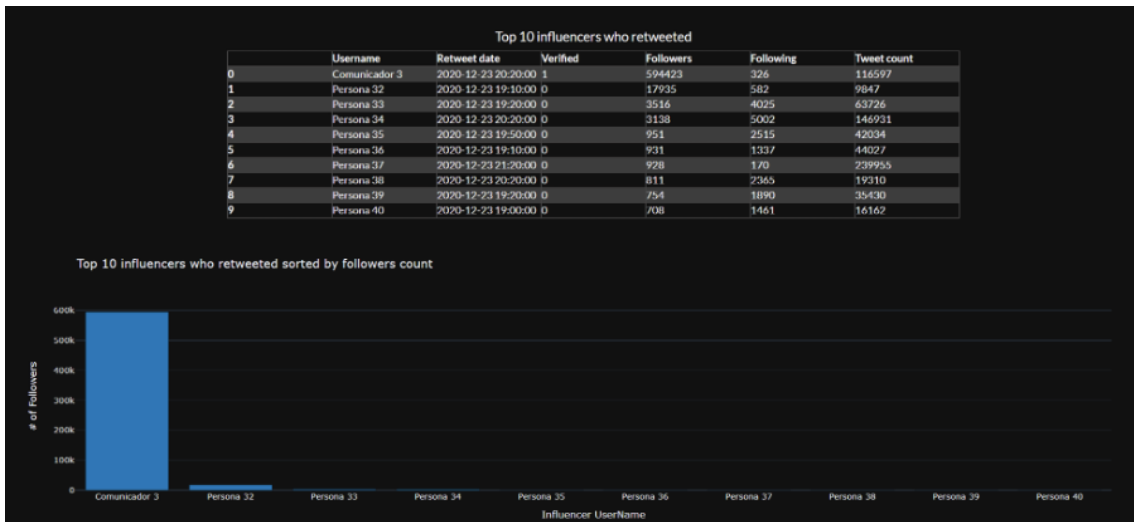
Figure 13. The ten most influential accounts that retweeted the example of pro-government content. Source: Authors' own work

Figure 14 shows that the most important activity occurred within the first three hours after the tweet was posted. Sportswriter 3's retweet generated the highest peak of activity.
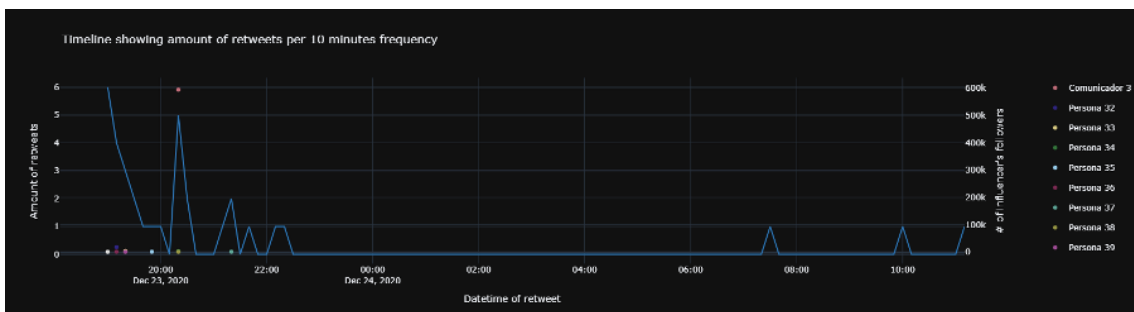
Figure 14. Lifespan of the number of retweets per 10-minute frequency and most influential accounts that retweeted pro-government content. Source: Authors' own work

The accounts with the most followers retweeted the content in the first three hours, and then the interest died down. **Figure 15** illustrates precisely the effect that Carlos Albert's retweet had in reaching a maximum number of followers.
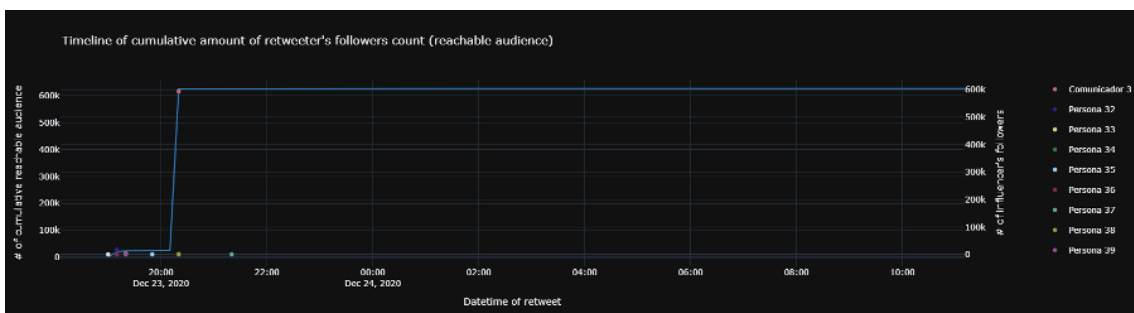
Figure 15. Cumulative number of followers of accounts that retweeted, by time of retweet. Example of disinformation content. Source: Authors' own work

The last case study highlights a representative example of the lifespan of a tweet with true content.

Lifespan of true content

Example 4. Tweet text: "@HLGatell announces vaccination schedule for Mexican school staff (public and private); vaccine chosen will be one-dose #Cansino #LaMañanera." (*La Mañanera* refers to the President's daily morning press conference.) [Original in Spanish: "anuncia @HLGatell el calendario de vacunación para el personal educativo de México (públicos y privados); la vacuna elegida será #Cansino de una sola aplicación #LaMañanera"].[76]

The content of this tweet is based on real facts and refers to a statement made by the federal government's anti-COVID-19 czar, Hugo López-Gatell: there is a vaccination schedule for educational personnel, and they will be given the CanSino vaccine. In this case, the accounts that gave the greatest coverage of this content were those of digital media communicators from radio and television outlets. Communicator 4, the host of a popular radio news program, retweeted the post (which reached her 700,000 followers). [*Fig. 16*].
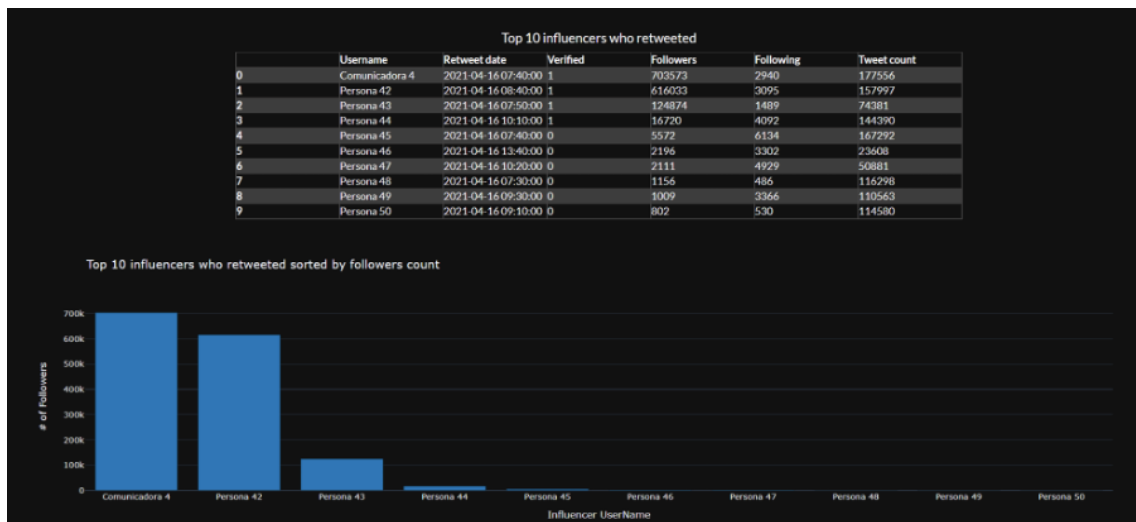
Figure 16. The ten most influential accounts that retweeted true content. Source: Authors' own work

The tweet's lifespan lasted less than eight hours. The moment of Communicator 4's retweet and the subsequent wave of retweets is visually striking; however, the wave ends before midnight on that day. [*Fig. 17*]

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[76] https://t.co/Blf6z3IbiF.

Figure 18 shows that Communicator 4's impact had a cascading effect on its audience reach.
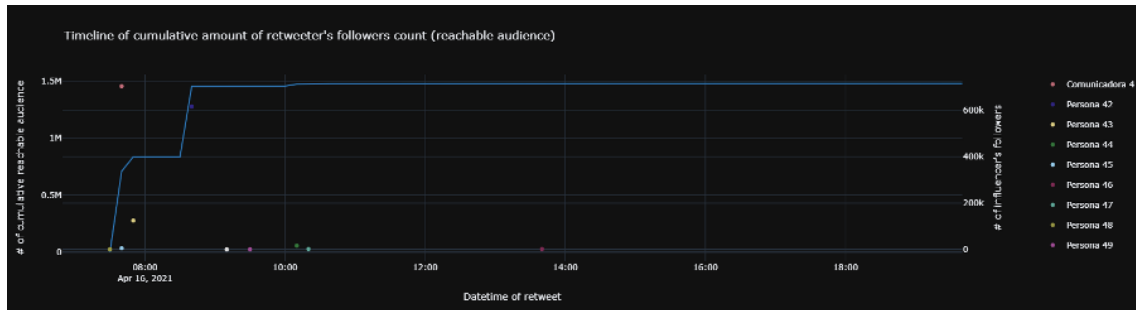
Figure 18. Cumulative number of followers of accounts that retweeted, by time of retweet. Example of true content. Source: Authors' own work

In conclusion, this study using a representative selection of cases reveals that most tweets go unnoticed and that the vast majority are not retweeted. What seems to prolong the lifespan of a tweet is when an account with a significant number of followers retweets it. Accounts with large numbers of followers in the hundreds of thousands are associated with mass media and public personalities. Tweets die out quickly and are short-lived; this happens with all types of content, except for disinformation. There is no identifiable pattern for disinformation, however, the tweet lifespan tends to last longer compared to the other content categories. In addition, it is very rarely retweeted by an account (possibly that of a public personality) with hundreds of thousands of followers.

After performing the tweet's lifespan analysis, observing the effects of interactions with influencers, and the reach and followers of retweeters, we sought to analyze the overall sentiments created by these posts. Sentiment analysis is a natural language processing methodology aimed at determining whether a dataset is positive, negative, or neutral. The sample collected has a large number of tweets; by performing sentiment analysis, we can determine their overall effect on public opinion within the network.

To carry out a study on general trends, we determine the average value for each of the categories previously explored. A two-part analysis is conducted on each tweet: contextual analysis and an analysis of syntactic composition. In other words, we analyze the text as a whole, then analyze it word for word. Two *Python* libraries were used for these analyses, namely VADER, and TextBlob and lexicons.
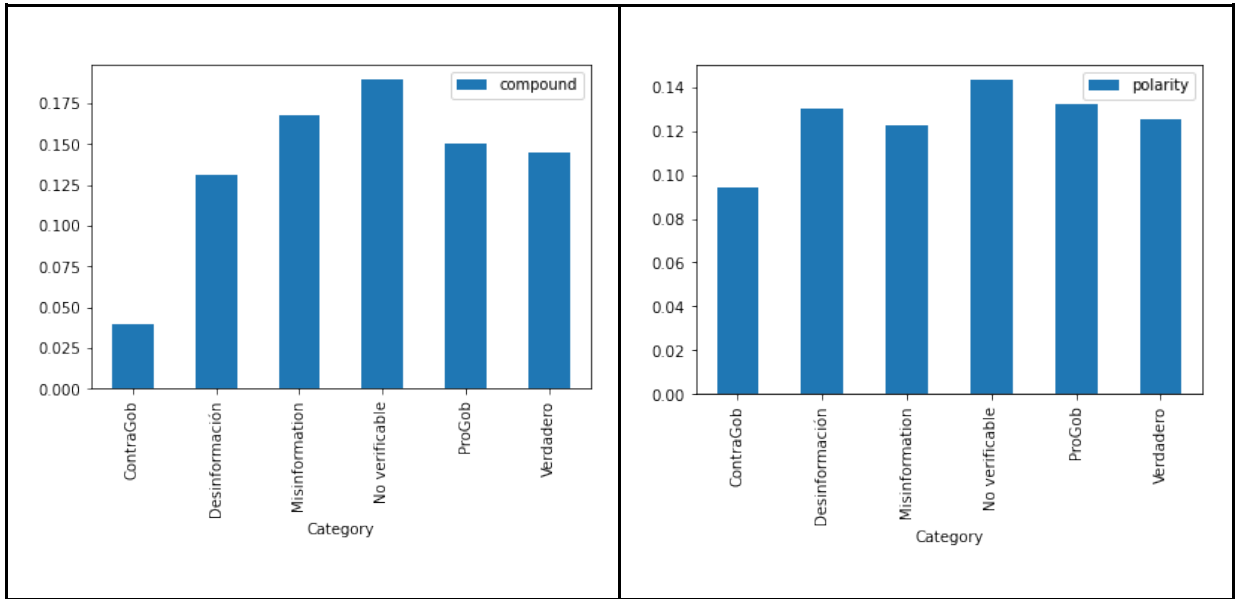
Graphs of normalized values of sentiment (-1 being negative, ranging to 1 being positive)
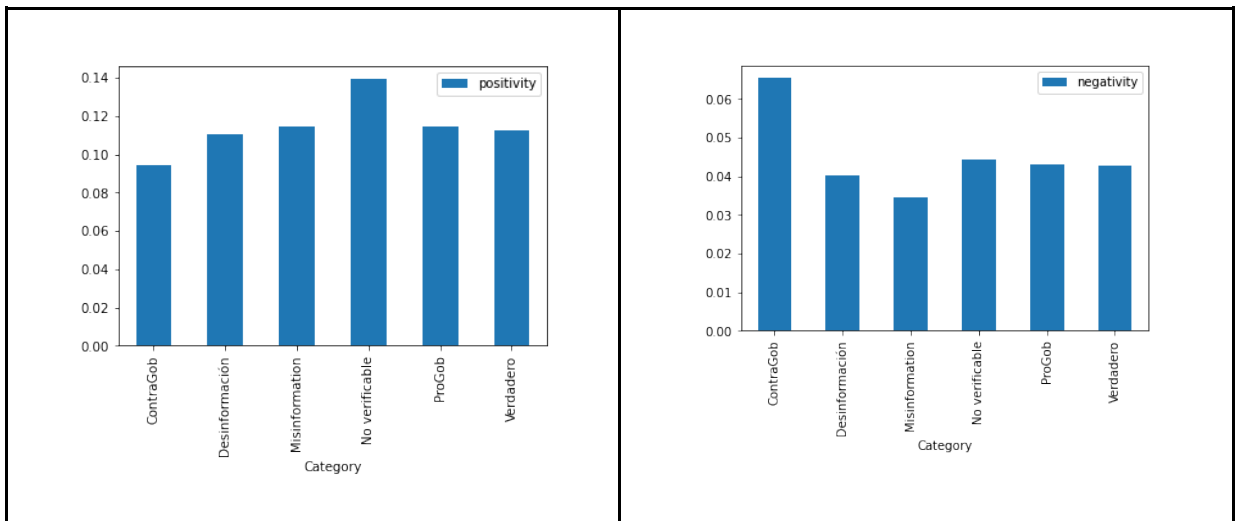
Graphs representing the average values of positivity and negativity per category
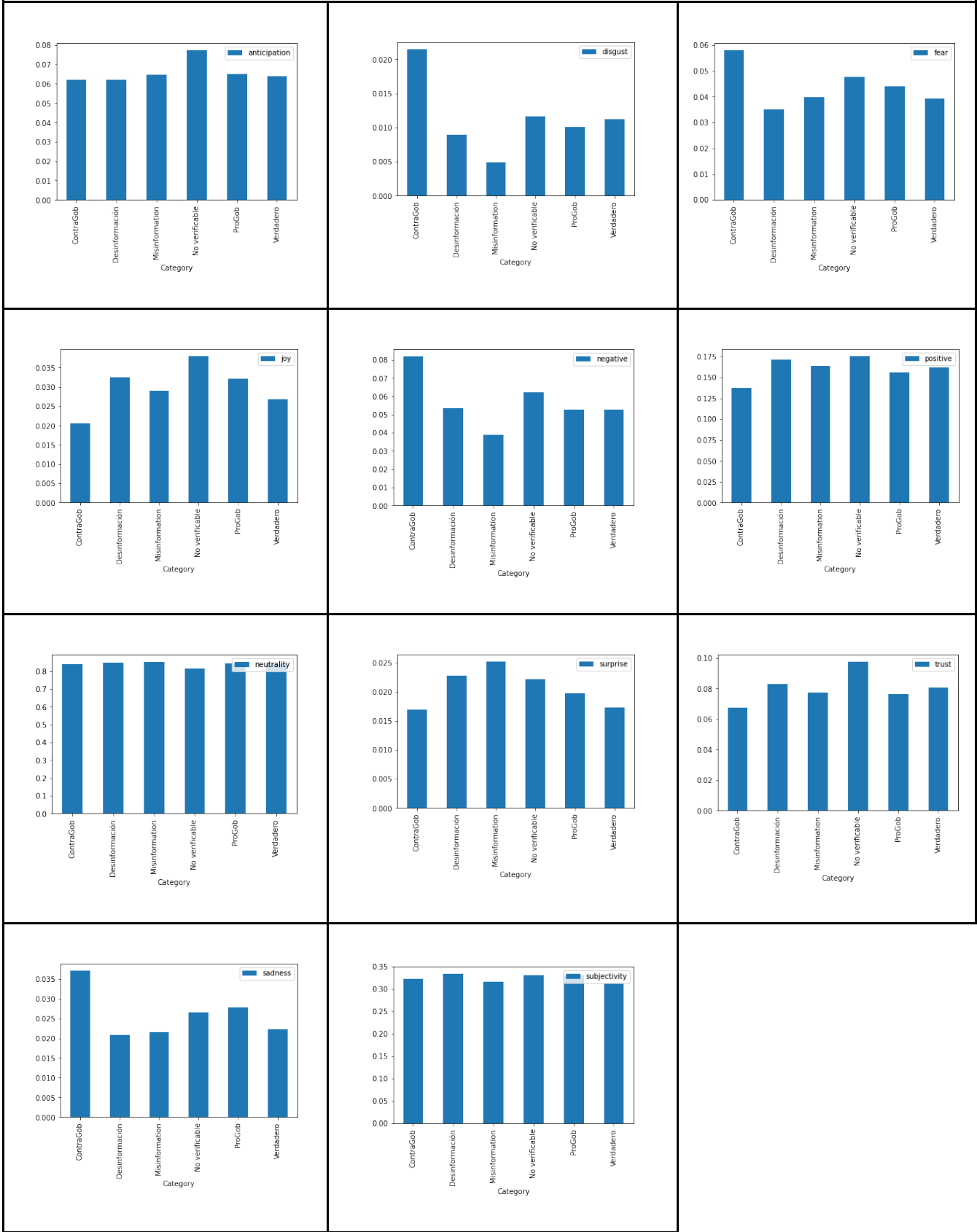
Graphs representing the average values for the percentage of words in tweets attributed to sentiment
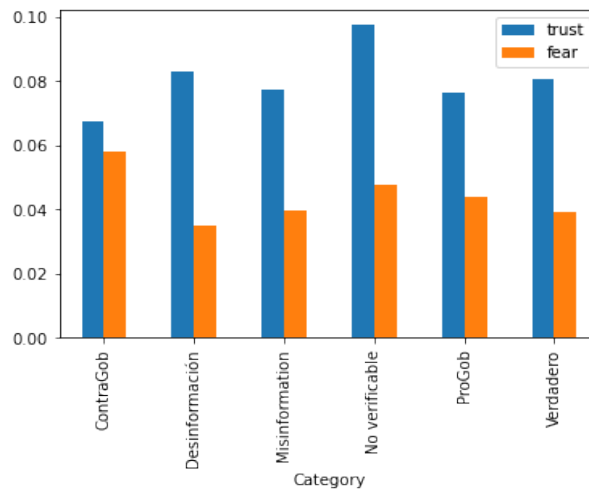
Contrast chart depicting the average values for the percentage of words in tweets attributed to fear and trust

Data interpretation

As seen in the previous graphs, there is a general tendency for tweets classified as anti-government to consist of words that are negative and generate fear, disgust, and sadness. However, despite not having high average values of positivity, one sees a high value placed on attempts to generate trust. This suggests that these types of tweets seek to negatively affect their readers without being unrealistic or too polarizing.

The lowest values for fear and negativity are found in the disinformation and misinformation categories. This suggests that the general strategy for the dissemination of these types of tweets may be based on using an expression of surprise, confidence, and joy. This promotes security, neutrality, and low levels of subjectivity. Language that generates fear is avoided. Therefore, these tweets can appear to be informative, transparent, and truthful.

There is on average a two percent difference between pro-government tweets (progob) as compared to anti-government tweets (antigob). It can be inferred that there is a lower use of negative words, taking into account that 80 percent of the total number of words is neutral for both categories. This suggests a possible trend towards greater neutrality in this category. There is a similar trend among tweets that belong to the misinformation category, which have a greater focus on trust and low levels of fear.

However, this category has higher levels of subjectivity, thus indicating that the average tweets tend to be opinions and not facts or informative speeches like those in the other categories. Tweets with accurate information have high levels of subjectivity and neutrality. Tweets with negative sentiments reflect lower values. We can conclude that

these tweets tend to be opinions, informative speeches, or replies to tweets without a specific agenda.

Finally, for tweets in the unverifiable category, a significant difference in behavior is observed compared to other categories. High levels of confidence, subjectivity, and positivity are reflected in their syntactic composition, compared to the other categories. After performing the sentiment analysis and observing the categorized averages, the values most reflected are neutrality, positivity, and subjectivity (making up more than 10 percent of the tweet structure). Tweets have high values of neutrality, ranging between 70 percent and 80 percent. Subjectivity, on the other hand, ranges between 30 percent and 35 percent. These values are the most prevalent when deconstructing the tweets word for word. Analyzing the categories in light of these sentiments reveals that the categories with the lowest subjectivity are anti-government and misinformation.

Therefore, it can be assumed that the general content of these tweets tends to generate dialogue and have an impact by seeking to present information as true. The disinformation, pro-government, and true information categories tend to be more subjective by using other elements such as comments, opinions, and expressing points of view in a clear way without presenting it as objective information. In contrast, the least relevant sentiments in the sample are: sadness, with values ranging between 2 percent and 3.5 percent; negativity, ranging between 4 percent-8 percent; and disgust, with values between 0.5 percent and 2 percent. This is because they are the categories with the lowest percentage of words in the syntactic composition of tweets. Something to keep in mind is that negativity is represented in the contextual analysis, but not in the syntactic composition analysis. This indicates that negative messages may not be direct, but may use elements such as sarcasm, puns, denial, etc.

- Zoom level 3 (the two central nodes)
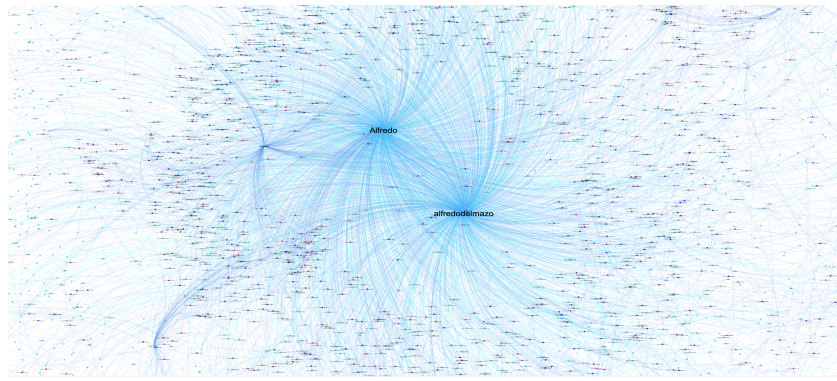
Central node 1. User with the most interactions: @alfredodelmazo and the mention of "Alfredo."

Visualization of the @alfredodelmazo community in Gephi v0.9.2. The colors represent the following: light blue nodes are Twitter users; dark blue nodes are tweets with positive compound value; pink nodes are tweets with neutral compound value; red nodes are tweets with negative compound value. The connections are represented by: purple (link to tweet); light blue (mention) and green (reply). To examine the network in high resolution, click here.

Note: In sentiment analysis, compound refers to the division of sentiment into ranges of three sentiments: 1 = positive, 0 = neutral and -1 = negative.

The image shows how the governor of the State of Mexico obtains most of the interactions in this sample through a very broad network that mentions him constantly, even more than López Obrador. Although at this stage it is not possible to determine if this is a coordinated campaign, this behavior can be a precautionary indicator of an artificial use of accounts. These generic accounts can be used to highlight the successes of a government, to praise its strategy to address the pandemic, or to create an artificial sense of popularity of government programs.
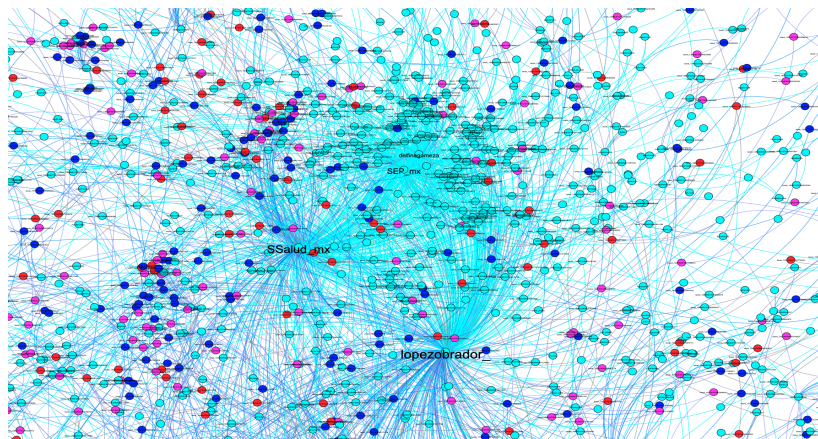
Central node 2. User with the most interactions: @SSalud_mx and @lopezobrador_.

Visualization of the @lopezobrador_ community in Gephi v0.9.2. The nodes represented in the image are (by color): light blue= Twitter users; dark blue=tweets with positive compound value; pink=tweets with neutral compound value; and red=tweets with negative compound value. The connections represented in the image are (by color): purple=link to tweet; light blue=mention; and green=reply to tweet.

The image shows a close-up of the community of the Mexican government responsible for handling the pandemic. We can see the interactions of the @lopezobrador_ node, followed by the Ministry of Health, and the Ministry of Education and its director, Delfina Gómez. It is worth noting the centrality of López Obrador. Although he is naturally mentioned for being the person ultimately responsible for the strategy against the pandemic, it is undeniable that he represents a good part of the polarization discourse; both in his favor and against him. This is similar to what Francesco Manetto calls, "the polarizing axis of public life" in his article for the newspaper *El País*.[77]

The analysis below focuses on two major nodes: Alfredo del Mazo and Andrés Manuel López Obrador. The scope of analysis of this section aims to shed light on the behavior of the network, its intentions, and in some cases, the emotions associated with its tweets.

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[77] Francesco Manetto, "El 'efecto López Obrador': la sociedad mexicana se polariza," *El País*, May 20, 2021. Available at: https://elpais.com/mexico/elecciones-mexicanas/2021-05-20/el-efecto-lopez-obrador-la-sociedad-mexicana-se-polariza-en-dos-bloques.html.

Note: For the sake of conciseness, this report does not delve into the technical aspects of the study, but rather into the interpretation of the network visualizations and data. Technical details can be further explained in a future supplemental appendix if necessary.

Alfredo del Mazo and the government of the State of Mexico

It comes as no surprise that Alfredo del Mazo's government uses generic accounts to promote its government programs, achievements, and pandemic management policies. This behavior has been previously documented by several media outlets such as BBC or Proceso magazine, to name a few. A recent study conducted by Signa Lab at the Western Institute of Technology and Higher Education (Instituto Tecnológico y de Estudios Superiores de Occidente, ITESO) titled "PRI Edomex: new digital trainings" states that the generic accounts that constantly support the PRI and the governor of the State of Mexico, Alfredo del Mazo, share the following characteristics:

- They use generic names, common names from A to Z, accompanied by a random sequence of eight digits.

- The posts generated by these accounts are consistently supportive of the PRI or del Mazo's government.

- Occasionally, they post the same tweet or minimal variations of the same message. Most accounts identify themselves with names and images of women.

- These accounts do not receive more than 10 likes, which suggest low organic engagement.

- More than 80 percent of these accounts registered fewer than 200 followers when the data was downloaded.

- Of these 26,842 generic accounts, 1,436 were created in 2018 (5.34 percent), 11,951 in 2019 (44.52 percent) and 13,455 in 2020 (50.12 percent). [Figures from the Signa Lab study.]

Given these characteristics, we searched our sample of 20,036 tweets for accounts that had letters accompanied by a random eight-digit sequence. We found 1,314 accounts with common names (mostly women) accompanied by such a sequence. When exploring these accounts, we noticed that many of them followed the same pattern; they express a positive opinion of the State of Mexico's handling of the pandemic, as seen in the following three examples:

Examples of accounts within Alfredo del Mazo's network showing generic account patterns.

This behavior raises the following question: if these accounts are generic and have been artificially created to support Alfredo del Mazo's government, who is managing them?

The state government may be using generic accounts to increase Twitter activity. Proving the existence of a coordinated campaign, as well as the originator and coordination of these suspicious accounts, is beyond the scope of this report. However, it does provide a path for future investigations.

In addition to accounts that magnify local government accomplishments, further examination of more suspicious accounts (that contain names followed by eight random

digits) reveals that this behavior is not limited to positive tweets or posts thanking the governor's hashtags and tweets. There are also some accounts with similar characteristics that are targeting the federal government.

For example, @nombrefemenino+ocho-dígitos -aleatorios is a user who publishes constant and repeated claims against the federal government. In these tweets, she repeatedly mentions the Ministry of Public Health (@Ssalud_mx), the Ministry of Public Education (@SEP_mx), President Andrés Manuel López Obrador (@lopezobrador_), and Minister of Public Education Delfina Gómez (@delfinagomeza).

Twitter user profile @nombrefemenino+ocho-dígitos -aleatorios

Two behaviors stand out:

1. Constantly shares (retweets) anti-government content.

2. Uses the hashtag #IDeservetobeVaccinated (#MerezcoSerVacunado) in posts directed at government leaders.

These two behaviors are exemplified below in non-stop tweets. These tweets are also posted with systematic regularity.
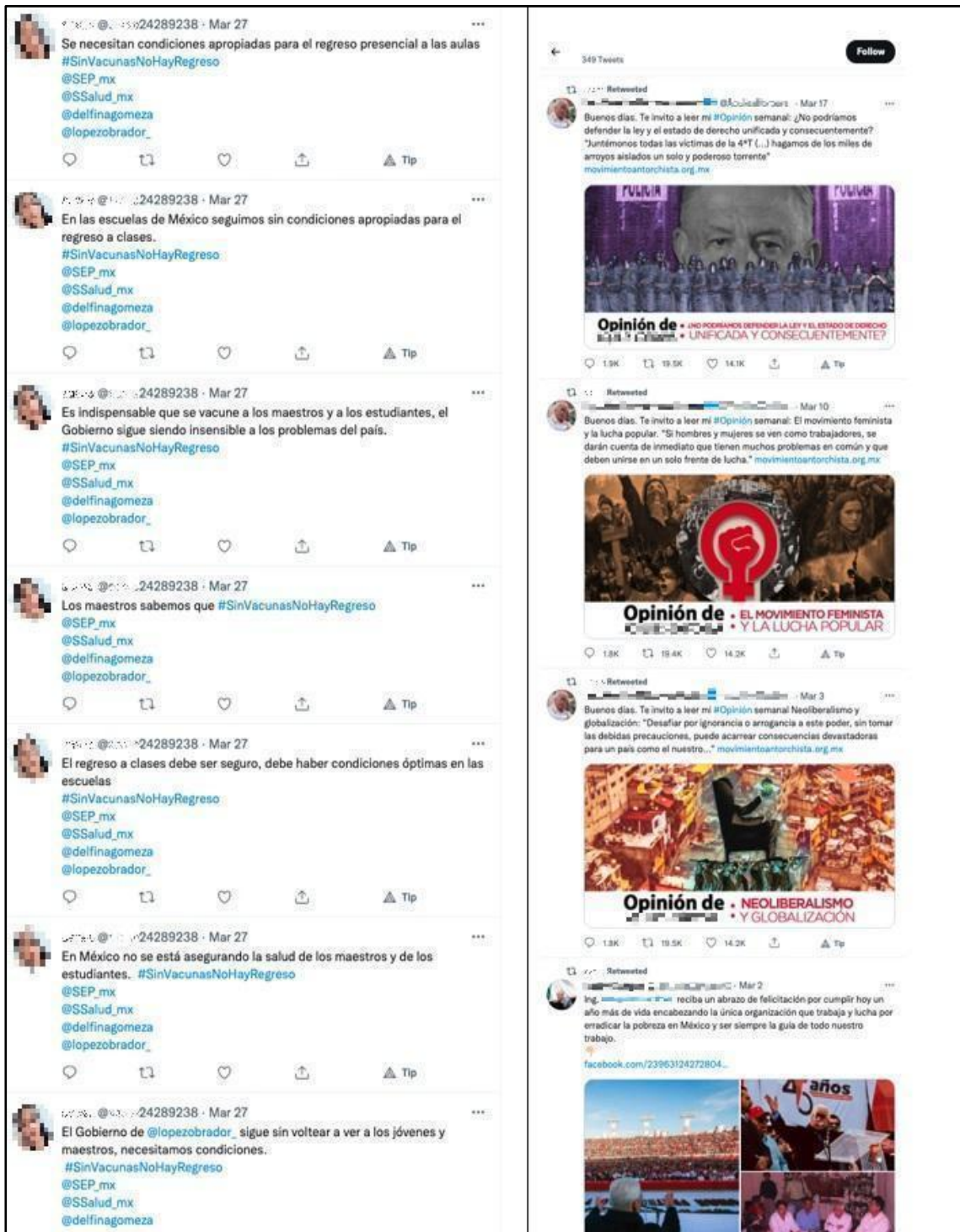
Examples of tweets within Alfredo del Mazo's network that display continuous posting patterns with the hashtag #MerezcoSerVacunado.

Based on this behavior, the few organic interactions, and the account's username (@nombrefemenino+ocho-dígitos -aleatorios), we decided to use the Botometer application. Botometer is a public web application developed by the Observatory on

<u>Social Media</u> (OSoMe)[78] that analyzes particular Twitter accounts and gives a score between 0 and 5. The higher the score, the more bot-like the activity. When testing the application @nombrefemenino+ocho-dígitos-aleatorios scored 4 out of 5. This score—although inconclusive—indicates a high probability of it being a generic account, with *bot*-like behavior.
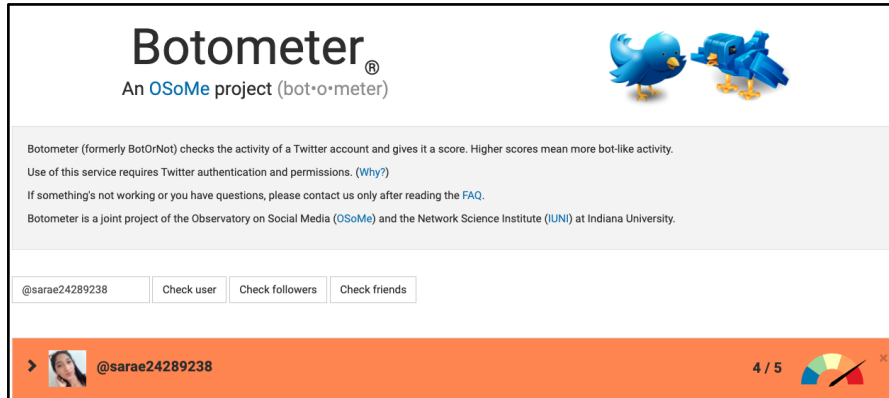
Screenshot of the results from the Botometer application.

Although one cannot be sure that the government of the State of Mexico is responsible for managing these accounts, or that these are indeed bots (Botometer's behavioral similarity analysis is not conclusive), this tool reinforces the idea that these accounts are suspicious. Individually, these types of accounts may seem irrelevant, but, considering that this sample contains 1,314 users with names composed of letters and eight digits who produced 6.6 percent of the 19,924 tweets under analysis, you can see how they "inflate" tweets for or against an agent if they work in a coordinated fashion.

In addition to users' suspicious behavior, there is another characteristic that draws attention: Alfredo del Mazo, governor of the State of Mexico, has a total of 682,852 followers (as of August 23, 2021), of which 171,009 (25 percent) have suspicious account patterns (names with 8 digits at the end). During 2020 and 2021, his account increased by 263,333 followers. Of these, 134,004 have the 8-digit pattern. That is, 78 percent of the new followers are suspicious accounts that were created between 2020 and 2021.

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[78] OSoME is a joint project of the Center for Network and Complex Systems Research (CNetS) at the Luddy School and the Media School and Network Science Institute (IUNI) at Indiana University. OSoMe brings together data scientists and journalists to study the role of media and technology in society and create tools to analyze and combat misinformation and manipulation on social networks.
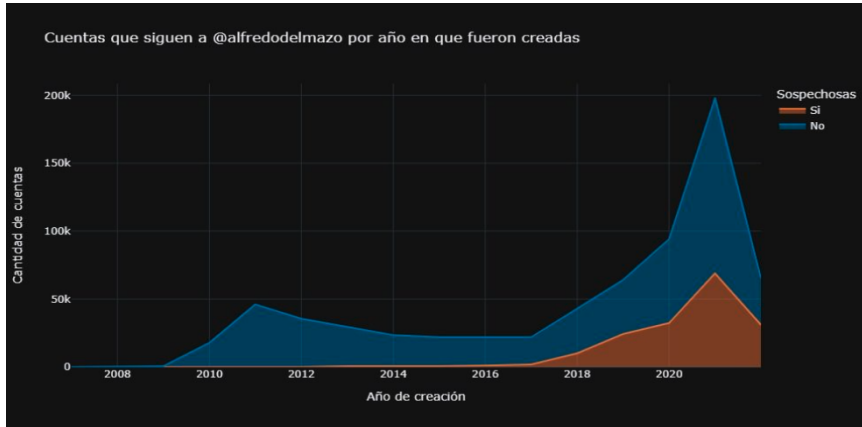
This graph shows the date on which suspicious accounts (ending with eight digits) were created, showing an unusual increase in 2020 and 2021.

Having the eight digits on the end of the username, being newly created accounts, and having a Botometer parameter equal to or greater than 4 reinforces the possibility of artificial accounts. The key is in the numbers. The sum of these seemingly innocent accounts becomes more relevant if they are thought of as a coordinated strategy of hundreds involving thousands of accounts, as if they were a swarm of bees moving in unison.

At scale, these generic accounts could be used as a tool to positively position issues related to the government of the State of Mexico or to attack opponents. It is difficult to calculate the scale of the swarm of generic accounts because it is necessary to consider the followers of the followers of these accounts, who do not necessarily follow Alfredo del Mazo but interact with his content or with his opponents. Therefore, their impact would be reflected in the aggregate and the interconnection that exists between these accounts.

Although the social or political impact of these networks is unclear, their effect on public debate should not be underestimated. These accounts not only have an impact at the state level but also at the national level. The State of Mexico has been able to position itself to trend nationally on repeated occasions. For example, two of the hashtags that were used as search terms in the sample of 20,036 were trending number one at the national level:
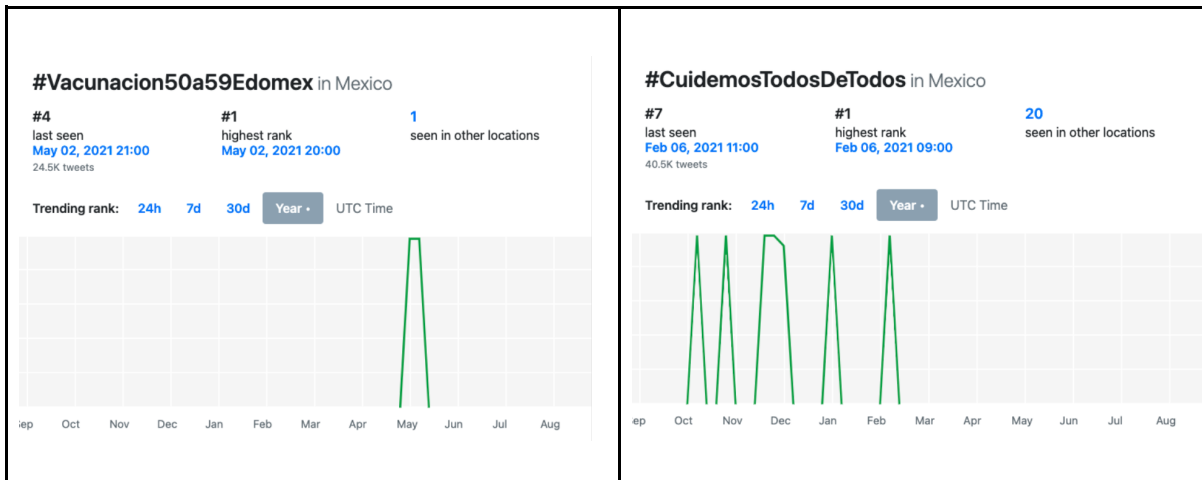
In parallel to the operation of the generic accounts, the government of the State of Mexico uses its ministries and institutions as a second line of dissemination. As shown in the following image, the state-level government institutions are connected to the mentions or hashtags that emerge from the accounts of Alfredo del Mazo and the government of the State of Mexico.

For a panoramic view of how the networks connected to Alfredo del Mazo and his secretariats operate, a visualization of the community of the user @alfredodelmazo was generated in Gephi v0.9.2 from a sample of 20,036 tweets, selecting the tweets with queryID = 8363 corresponding to #LetsTakeCareofEachOther (#CuidemosTodosDeTodos), previously identified as a national trend with a high level of relationship with @alfredodelmazo.
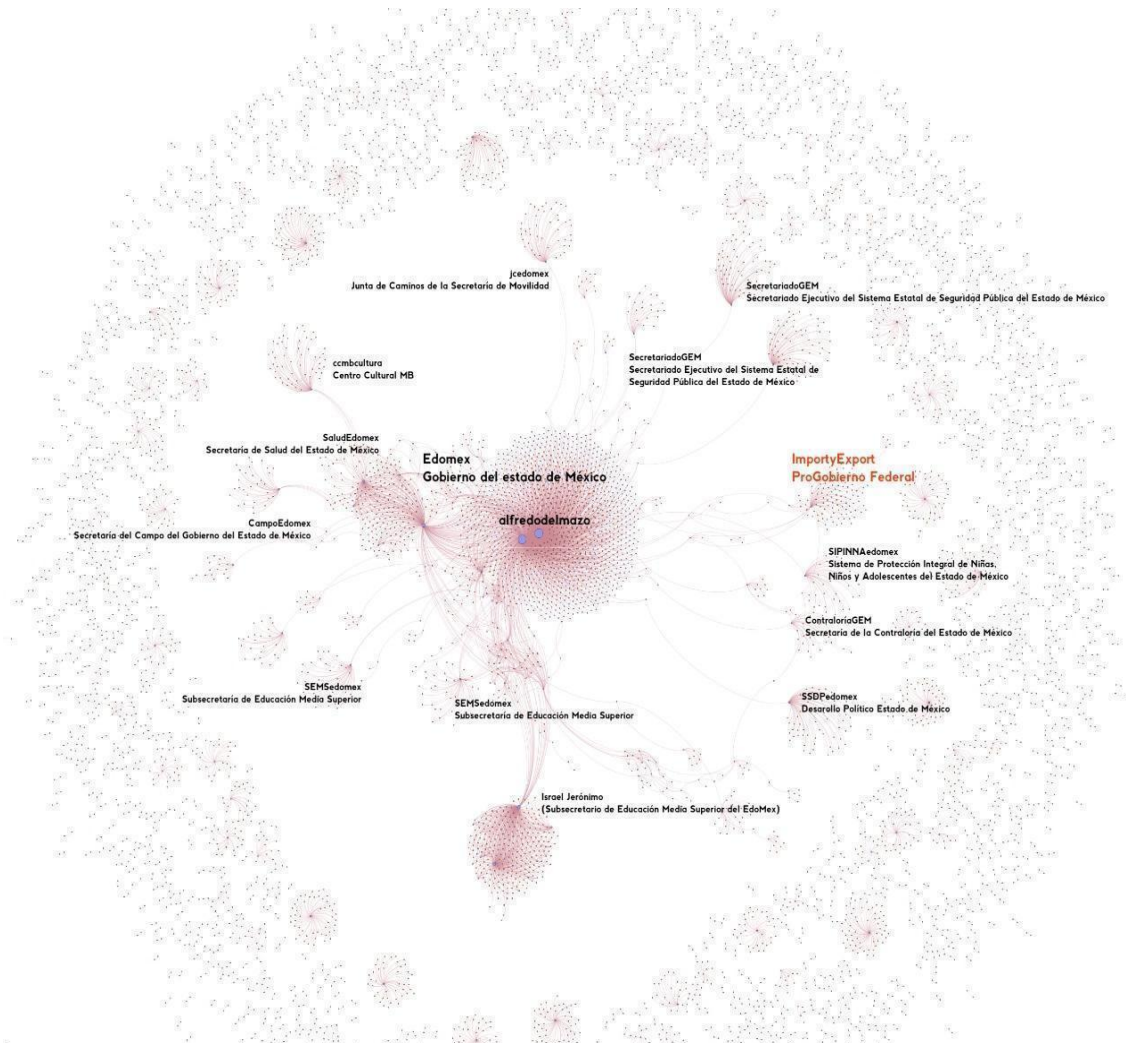
To view the network in high resolution, click here.

Visualization of the tweets generated by the search term with ID 8363, from the community of the user @alfredodelmazo with the hashtag #CuidemosTodosDeTodos in

Gephi v0.9.2. The colors represented in the image are: purple = users; and pink = tweets and links between tweets and users.

Unlike the generic accounts, this behavior is expected, since it reflects a positive communication campaign regarding the programs and events carried out by the government of the State of Mexico. With respect to communication from any state government, it is expected that there is coordination between institutional accounts and public official accounts. For this reason, it is not our priority to detail how information is disseminated from the institutional level. However, with the evidence presented in this analysis, it is better understood why Alfredo del Mazo has that degree of centrality, both in the sample of 20,036 tweets, as well as in the public debate.

In this section, we demonstrate the usefulness of network visualization to quickly detect the centrality of the most important accounts. Data visualization helps us understand how centralized or distributed a network is to analyze its nodes and identify underlying narratives. It saves a lot of time and is a fundamental part of understanding network dynamics. The centrality of Del Mazo's account allowed us to conduct a detailed analysis and consult the literature on the behavior of generic accounts.

This report is neither conclusive nor accusatory of the Alfredo del Mazo government operating a network of generic accounts. However, this phenomenon has been documented in the Signa Lab study, and the behaviors of these generic accounts strongly coincide with the results of this report. This allows us to conclude that there are enough elements to suggest atypical behavior.

The second most central node, the López Obrador government, is analyzed below.

The López Obrador government

Sentiment analysis and the definition of intention categories were conducted for the case of the López Obrador government. First, a general overview of Andres Manuel López Obrador's network and that of his government was presented. We began with the sample of 20,036 tweets, following the steps described below:

- Elimination of nodes corresponding to Alfredo del Mazo's network:

    ○ user_39860797 (alfredodelmazo)

    ○ user_142348200 (Alfredo)

    ○ user_15946615 (Edomex)

    ○ user_2884759347 (israelrjeronimol)

    ○ user_1238244179639242754 (Conalep_Edomex)

- Using the EgoNetwork filter with node ID user_82119937 (lopezobrador_) with "Depth" = Max (This step removed tweets and users in the same that have no relation to user lopezobrador_).

- This process generated a final network of 1,924 user-like nodes (1,508 categorized as "user," 416 as "_undefined") and 3,680 tweet-like nodes (3,668 categorized as "tweet," 12 as "_undefined").

- The data was exported to a.svg file. *To examine the network in detail, click here.*

The following image represents a general visualization of the federal government network from the sample of 20,036 tweets. The following users appear as central nodes:

- @lopezobrador_ (President of Mexico).

- @SSalud_mx (Ministry of Health and Welfare).

- @SEP_mx (Ministry of Public Education).

- @delfinagomeza (Minister of Public Education).
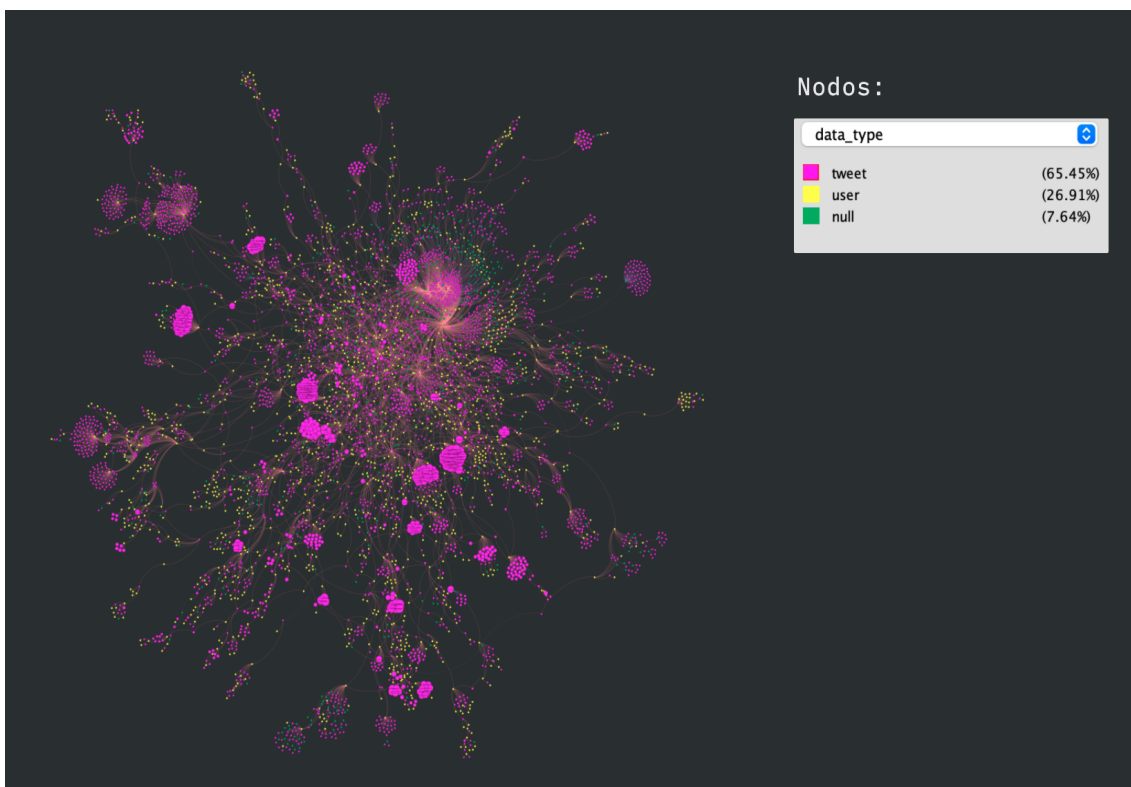
Visualization of the community of user @lopezobrador_ in GraphXR. The nodes represented are (by color): light pink = Twitter users; yellow = users and green = no valid classification.

As mentioned above, it is not surprising that Andrés Manuel López Obrador has the highest centrality in the network, since the polarization of Mexican public debate has revolved around him. Both his followers and opponents consider him the person ultimately responsible for the most important developments in the country and place him

at the center of polarization in favor of or against the federal government. His handling of the pandemic has been no exception. Second in centrality is the Ministry of Health, which is responsible for the pandemic response strategy.

The case of the Ministry of Public Education and Minister Delfina Gómez is likely connected to the debate and polarization around the strategy for resuming in-person education across the country. When examining the network, it was found that Delfina Gómez's prominent centrality was mainly due to the hashtag #SpeedUpVaccinesforAll (#AgilicenVacunasParaTodos), which links her to the accounts @Ssalud_mx, @SEP_mx and @lopezobrador_.

GraphXR visualization of the concentration of tweets containing the hashtag #AgilicenVacunasParaTodos connected to the main nodes of the Mexican government network. The nodes represented in the image are (by color): yellow = Twitter users; blue = tweets; and gray = no valid classification.

Network of emotions

Following the same protocol, we generated a network that reveals a general sentiment map.

The image below illustrates AMLO's network, extracted from the 20,036 tweets, which shows the emotions of the tweets labeled as "true" in the network (which are the majority). Yellow nodes equal users; green nodes equal positive sentiments of tweets; gray nodes equal neutral sentiments; and red nodes equal negative sentiments.
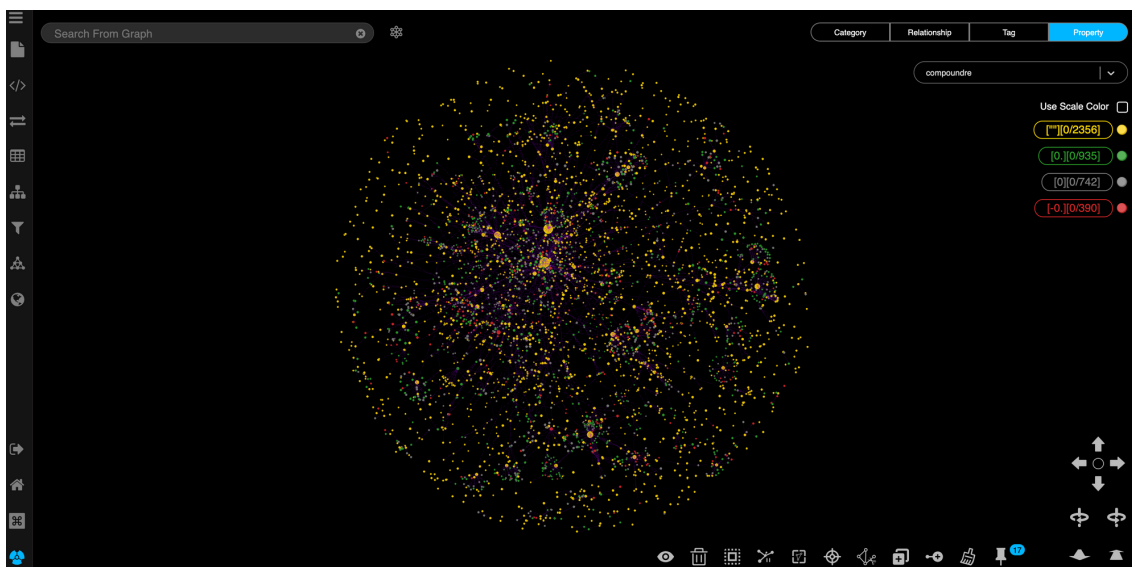
GraphXR visualization of the emotions (compound) of the AMLO network sample. Yellow nodes correspond to users; green nodes correspond to positive sentiments; gray nodes correspond to neutral sentiments; and red nodes correspond to negative sentiments.

As seen, there are no emotional clusters, but rather a relatively homogeneous distribution. However, we must remember that sentiment analysis should not be taken as an exact measure, but as a computational approximation.

The percentage accuracy of sentiment analysis is summarized in this report and is also explained in previous reports. Therefore, we will focus on explaining how an approximation of the emotional aggregate of each tweet helps to visualize polarization in a large volume of tweets, something that would be impossible to do manually.

The negativity of a tweet, whether pro- or anti-government, can be an indicator of possible polarization. Provocative and sometimes foul language—most frequently used in tweets labeled with high negativity—help us detect actors or media outlets that polarize the public debate. The relationship between negativity and the polarization of a tweet is depicted later in this section.[79]

Ranking of intentions and emotions of AMLO network users

To have a better understanding of the network, this ranking is composed of the number of tweet interactions (mentions, retweets) and the sentiments they generated. In this case, users were ordered sequentially by the number of followers and those who accumulate more *likes* and retweets, therefore having a larger platform of dissemination or influence.

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[79] This type of visualization can monitor network emotions. If clusters of negativity or positivity are detected, they can be considered as an indicator of polarization as long as the values are consistently in the higher range of negativity or positivity.

In addition to the selection of users with highly relevant platforms, and as a result of the labeling of intentions and emotions in this sample, it is possible to distinguish which of these influencers show tendencies in favor of or against the current government. Tweets labeled as true and those considered misinformation-disinformation, as well as the emotion assigned to each of the tweets in the sample, are presented.

The tables presented below include the sentiment of each tweet with the compound value of the sentiment analysis that was conducted. The compound is valued on a scale of three sentiments:

- **1** positive sentiment [blue].

- **0** neutral sentiment [gray].

- **-1** negative sentiment [red].

Note: These rankings correspond only to the sample of 20,036 tweets filtering Alfredo del Mazo's network, as explained at the beginning of this section.

The tables are organized into six categories:

1. The ranking of users who show tendencies opposed to the federal government and the emotional profile (compound) of each of their tweets.

2. The ranking of users that show tendencies in support of the federal government and the emotional profile (compound) of each of their tweets.

3. The ranking of misinformation and disinformation (together) of the network and the emotional profile (compound) of each of its tweets.

4. Ranking of tweets in the network marked as true and the emotional profile (compound) of each of its tweets.

5. Ranking of users who show tendencies in opposition to the federal government, tagged as misinformation+disinformation and the emotional profile (compound) of each of their tweets.

6. Ranking of users that show tendencies in support of the federal government, tagged as misinformation+disinformation and the emotional profile (compound) of each of their tweets.

These rankings allow us to observe the actors with the largest platforms for dissemination and influence in the network, which allows us to create collective taxonomies and divide the network into groups,[80] as well as to compare this information between groups to better understand their relationships.

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[80] For example, groups that post truthful tweets, tweets with misinformation and disinformation content, and antagonistic groups.
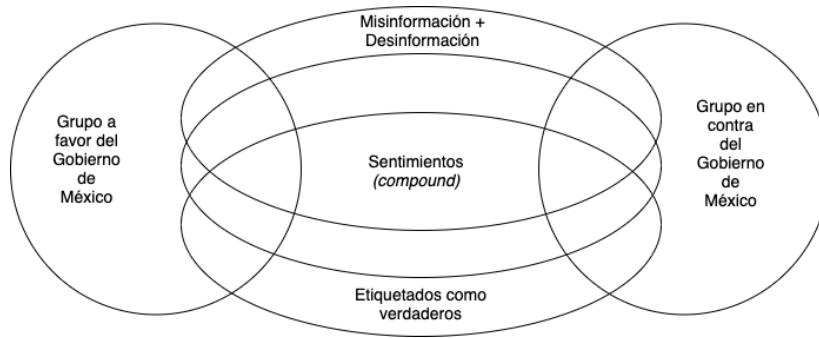
The diagram illustrates the labels and possible combinations of intentionality and emotionality of the tweets in this sample.

The possible combinations offered by this framework help to create a taxonomy with several dimensions, from which patterns can emerge that indicate a certain political preference or affiliation. In addition, the tweets they produce can be categorized as true, misinformation, and disinformation. Simultaneously, we can analyze the sentiment of the content they post, which allows us to better understand the intentions and emotions of particular groups and accounts.

Six possible rankings are described below.

Ranking of users showing anti-government tendencies (drawn from a federal government subsample of the original 20,036 tweets).

Tweets and accounts that show trends in opposition to the federal government and its sentiment compound.

QueryId	Id-Tweet	Author Id An	Max Foll..	Max Favorit..	Max Retwe..	Compound
29	1.34248348768E+18	39841091664	76297	2	0	-0.5859
	1.34955356050E+18	508336000000	14795	4	1	0.6249
	1.35005320731E+18	1.889e+20	5933	3	3	0.4939
	1.38371005615E+18	145525000000	5825	24	7	0.5859
	1.34320287619E+18	29559913944	4942	1	0	0.4939
	1.34311962340E+18	1287570000000	3441	12	9	0
	1.38467675962E+18	9662643672	2607	1	0	-0.0572
	1.34515635679E+18	39404030952	1721	0	0	0.3774
	1.34194259856E+18	748904000000	1452	4	3	-0.3818
	1.34332860247E+18	26995466520	1219	0	0	0.2732
	1.35554838888E+18	70449654264	1067	0	0	0
	1.34815567611E+18	2.0469e+20	764	0	0	0.3182
	1.35229870162E+18	32593750992	730	1	1	0
	1.34211320679E+18	691440000000	674	4	3	0
	1.34213557652E+18	34078947936	524	1	0	0
	1.34339124628E+18	3.54266e+20	493	0	0	0
	1.34360275011E+18	79482756408	369	1	0	0
	1.34296625471E+18	753329000000	264	2	0	0
	1.34189607664E+18	2.44891e+20	72	1	0	0.4019
	1.34739387377E+18	206252000000	24	1	1	0.4404
32	1.35460119513E+18	70327132920	208720	6	1	0.7506
	1.37970074514E+18	2.40388e+20	93	1	0	0.7506
33	1.37729426465E+18	64844535360	3290	1	2	-0.6808
	1.35223390855E+18	1241630000000	852	0	0	0
36	1.37920765542E+18	106844000000	5312	0	1	0
	1.35484722049E+18	571737000000	463	0	0	0
	1.35558109833E+18	2.18173e+20	89	1	0	0.5106
38	1.38422349296E+18	3.12365e+20	946	2	0	0.8271
	1.35563522093E+18	111263000000	145	0	0	0.25
39	1.35557273610E+18	62472039960	7858019	617	214	0.3182
	1.35446545810E+18	40222674360	434931	8	10	0.6249
	1.35572676535E+18	30187571304	311772	168	68	0.2235
	1.35479385365E+18	37400597784	227363	7	1	-0.2732

For a complete list of the subsample, download the following files:

Table - antigob user tweets.png

Table - antigob user tweets.csv

The following graph depicts the relationship between followers, favorites, and retweets, as well as the main tagged accounts that show tendencies in opposition to the federal government.
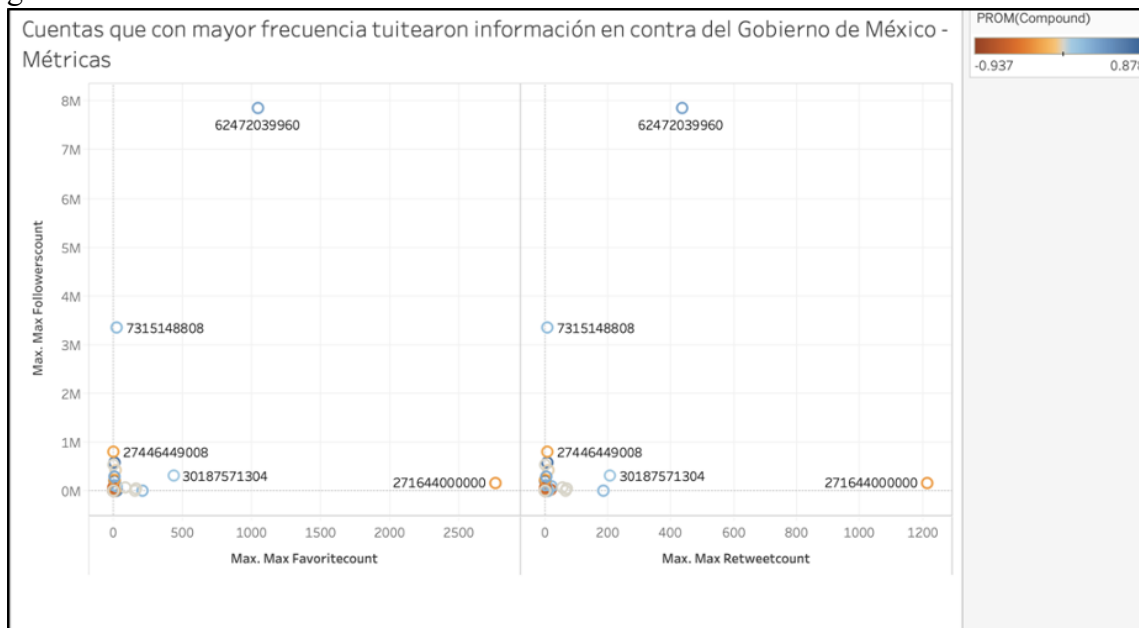
The graph shows the tweets displaying anti-federal government tendencies that were extracted from the federal government subsample. The y-axis shows the maximum number of followers of the author of the tweet, and the first x-axis shows the maximum number of favorites (likes). The second x-axis shows the maximum number of retweets. Each point includes the screen name of the author of the tweet, and the color represents the compound value in scale (red for negative compound values and blue for positive compound values).

Ranking showing trends related to the federal government (obtained from the subsample drawn from the original sample of 20,036 tweets).

Tweets and accounts showing trends in support of the federal government.

Cuentas que con mayor frecuencia tuitearon información a favor del Gobierno de México

Id-Tweet	Author Id An	Queryid	Max Foll..	Max Favorit..	Max Retwe..	Compound	
1.356323977816E+18	1.3745200E+11	51	8858234	14	0	0	
1.350178090690E+18	1.5611900E+11	29	1710051	2485	532	-0.5267	
1.355214123391E+18	5.3046304E+10	51	854933	5	3	0.4548	
1.341911719347E+18	1.6599000E+11	29	387704	146	35	0.2732	
1.355628657663E+18	3.3540100E+11	44	280001	1654	423	0.0382	
1.355579504287E+18	3.3540100E+11	49	280001	3207	867	-0.296	
1.351247044842E+18	4.3385054E+10	29	119954	3	2	0.7964	
1.379839912565E+18	1.3028800E+11	140	112799	59	43	0	
1.374948868346E+18	1.2209100E+11	8363	90120	80	42	0	
1.371992932711E+18	1.2209100E+11	8363	90120	36	20	-0.1027	
1.371538941259E+18	1.2209100E+11	8363	90120	31	17	0	
1.355363137802E+18	4.6429733E+10	49	88399	1	0	0.5267	
1.383284955552E+18	6.2418700E+11	43	52623	13	8	0	
1.397644948372E+18	3.3680556E+10	8372	44678	75	36	0.4404	
1.384323537965E+18	1.0118000E+11	56	40393	23	3	0.4404	
1.387995161323E+18	1.5825800E+11	8363	32348	17	3	-0.2732	
1.397299490617E+18	3.7440168E+09	8365	31466	9	2	0.296	
1.357547238361E+18	4.0465037E+10	43	30296	52	13	-0.3612	
1.377047995490E+18	2.5799300E+11	8363	15808	0	1	0	
1.355617915853E+18	4.2719400E+11	51	15089	6	2	0.4902	
1.351003444153E+18	4.2655700E+11	29	14480	0	0	0.4019	
1.356412508870E+18	1.2819900E+12	43	10748	1	1	0	
1.384572802075E+18	2.6929400E+20	8338	8358	3	2	0	
1.366390211363E+18	7.6679000E+11	8363	7929	0	1	0	
1.355988380766E+18	1.0525300E+11	49	7025	120	35	0.765	
1.384513039513E+18	2.8566400E+20	8338	6816	9	1	0.3612	
1.356724373651E+18	3.3825200E+20	52	6050	35	24	0	
1.387384937151E+18	2.2178000E+11	8372	5252	181	58	0	
1.357906161392E+18	3.5618900E+20	53	4383	91	47	0.3182	
1.383265441620E+18	7.1953800E+11	8338	4363	2	2	0.9324	
1.344415420292E+18	3.4145100E+20	29	4152	11	6	0.5106	
1.358853104570E+18	1.8567300E+11	8363	2965	4	0	0.2148	
1.387406899806E+18	1.0660400E+12	8372	2836	1	0	Nulo	

PROM(Compound)
-0.727   0.972

To view the full list from the sample of 20,036 tweets, download the files below:

Table - progob user tweets.png

Table - progob user tweets.csv

The following graph depicts the relationship between followers, favorites, and retweets, as well as the different actors that show trends in support of the federal government.

Cuentas que con mayor frecuencia tuitearon información a favor del Gobierno de México - Métricas

PROM(Compound)
-0.593   0.972
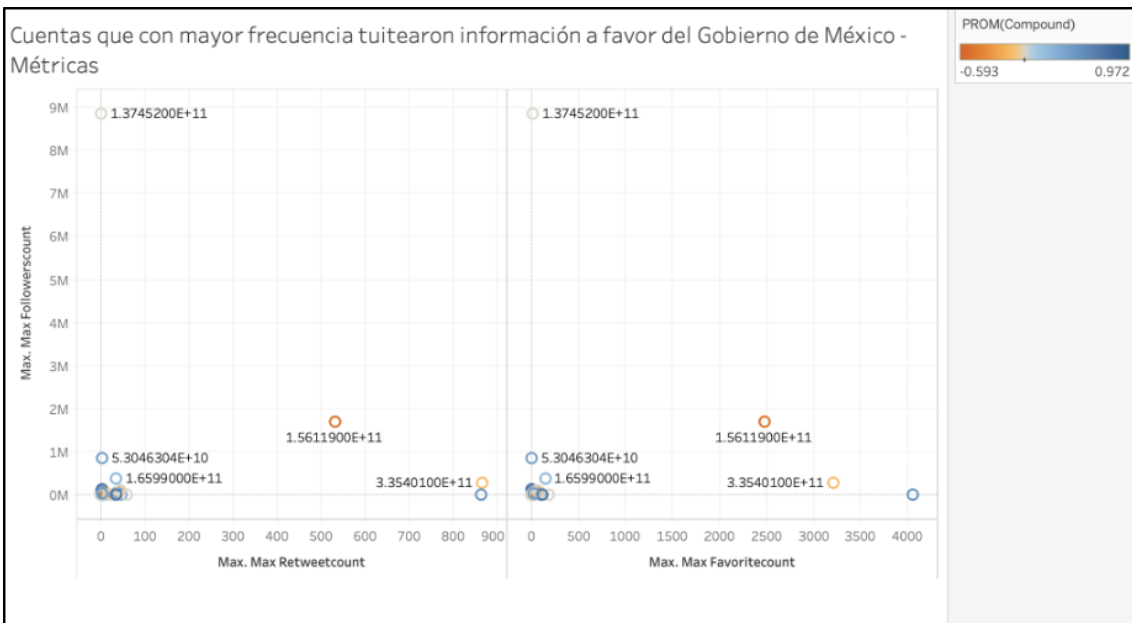
The graph presents the tweets extracted from the subsample that exhibit trends related to the federal government. The y-axis shows the maximum number of followers of the author of the tweet, the first x-axis shows the maximum number of favorites (likes), and the second x-axis shows the maximum number of retweets. Additionally, each point is accompanied by the screen name of the author of the tweet and the color of the dot represents the compound value in scale (red for negative compound values and blue for positive compound values).

Ranking of misinformation and disinformation (extracted from the federal government subsample of the 20,036 tweets).

Tweets from the sample tagged as "misinformation and disinformation."

Id-Tweet	Author Id An	Queryid	Max Foll.. ╤	Max Favorit..	Max Retwe..	Compound	
1.345867495E+18	9.2436218E+09	29	8121786	12	4	-0.5106	
1.354675574E+18	6.2472040E+10	46	7858019	21	3	0.1531	
1.385449525E+18	6.5919050E+09	43	4983262	42	13	Nulo	
1.383573559E+18	1.0865342E+10	39	4924595	21	17	0	
1.341858643E+18	7.3151488E+09	29	3351867	17	3	0	
1.384846990E+18	6.7059588E+09	43	3220343	3	1	0.6124	
1.370092538E+18	3.3318005E+10	46	2563702	2	0	0	
1.383018584E+18	6.4473747E+10	39	1555025	10	2	0.7506	
1.355097102E+18	2.9257137E+10	29	1369656	5	0	0	
1.355735055E+18	8.1902164E+09	39	945477	9	9	0.6234	
1.355534999E+18	2.7767570E+20	46	869262	26	12	0.1779	
1.381717510E+18	2.5569116E+10	32	562547	1	0	0.2716	
1.354926571E+18	3.5027957E+10	46	546409	2	0	0	
1.383820619E+18	4.0222674E+10	43	434931	5	2	0	
1.349545746E+18	4.0222674E+10	29	434931	8	4	-0.1027	
1.379857031E+18	2.2332554E+10	45	387788	2	1	0.4927	
1.389406968E+18	2.3484764E+10	8365	341706	3	0	0	
1.387243926E+18	1.0105139E+10	8372	285812	59	9	0	
1.355628658E+18	3.3540135E+11	44	280001	1654	423	0.0382	
1.342113611E+18	4.7590433E+10	29	145004	2	1	0	
1.346190413E+18	6.6797534E+10	29	144543	7	9	0	
1.354576673E+18	3.9331332E+10	41	102875	1	0	0	
1.346622391E+18	3.9331332E+10	29	102875	1	1	0.3182	
1.370074619E+18	3.9167169E+10	44	86012	1	1	0.4779	
1.342483488E+18	3.9841092E+10	29	76297	2	0	-0.5859	
1.344682482E+18	7.8887226E+11	29	59631	8	1	0.4588	
1.357856535E+18	3.3369577E+20	56	55570	2	1	0.6705	
1.354565080E+18	3.3369577E+20	43	55570	10	5	0	
1.344723998E+18	3.3369577E+20	29	55570	1	1	0.6486	
1.354658516E+18	7.3950952E+11	49	50282	12	3	0	
1.382378596E+18	1.4610897E+10	43	23270	0	1	0.6808	

Table - misinformation+disinformation user tweets.csv

The following account shows the ratio of followers, favorites (likes) and retweets, as well as the main accounts labeled as "misinformation or disinformation."

Cuentas que con mayor frecuencia tuitearon información mis+dis information del Gobierno de México -Métricas
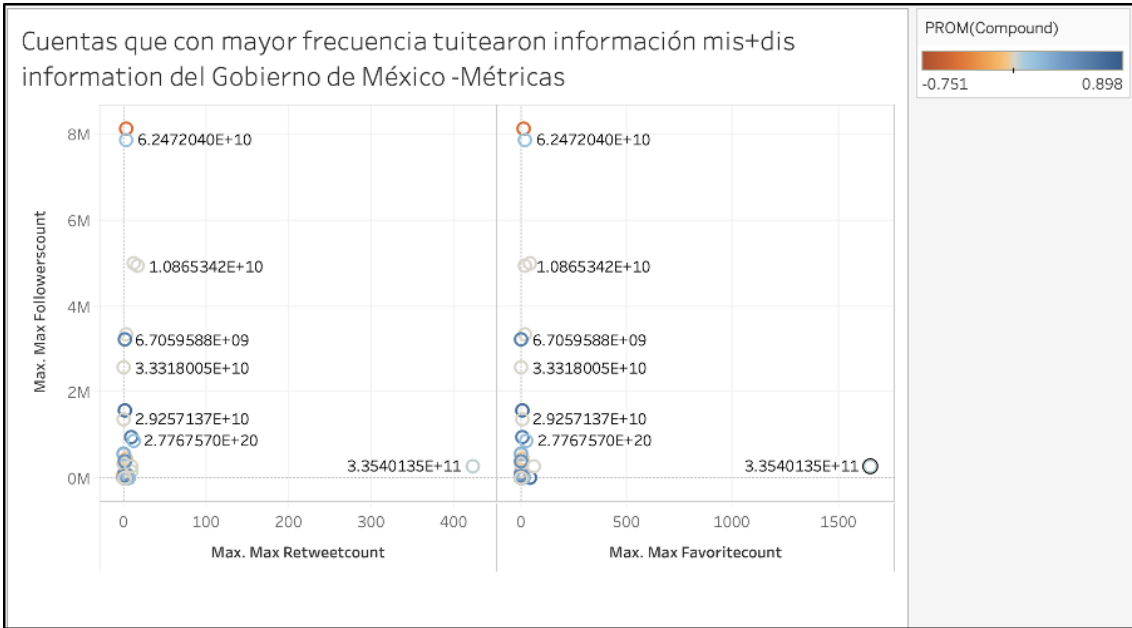
The graph shows the tweets labeled as "misinformation and disinformation" in the federal government subsample. The y-axis shows the maximum number of followers of the author of the tweet, the first x-axis shows the maximum number of favorites (likes), and the second x-axis shows the maximum number of retweets. Each point shows the screen name of the author of the tweet, and the color of the dot represents the compound value in scale (red for negative compound values and blue for positive compound values).

Ranking of tweets marked as true from the federal government subsample (drawn from the original sample of 20,036 tweets).

Cuentas que con mayor frecuencia tuitearon información verdadera del Gobierno de México

Id-Tweet	Author Id An	Queryid	Max Foll..	Max Favorit..	Max Retwe..	Compound
1.3882870..	1.3328724..	49	8858234	355	45	Nulo
1.3870684..	1.3328724..	8372	8858234	83	33	0
1.3845725..	1.3328724..	229	8858234	100	9	0
1.3812355..	1.3328724..	229	8858234	73	28	-0.0772
1.3798840..	1.3328724..	43	8858234	364	90	0.3612
1.3739715..	1.3328724..	229	8858234	146	26	0.4767
1.3641847..	1.3328724..	56	8858234	319	66	0.3818
1.3563239..	1.3328724..	51	8858234	14	0	0
1.3558973..	1.3328724..	49	8858234	136	21	0.6234
1.3555313..	1.3328724..	43	8858234	109	55	0.4019
1.3545698..	1.3328724..	43	8858234	29	5	-0.5994
1.3526728..	1.3328724..	8348	8858234	28	4	-0.25
1.3476946..	1.3328724..	29	8858234	96	40	0
1.3464263..	1.3328724..	29	8858234	68	13	0.9246
1.3461469..	1.3328724..	29	8858234	175	43	0.0516
1.3854108..	2.0469969..	229	8055300	31	16	0.5574
1.3849308..	2.0469969..	32	8055300	25	10	0.5812
1.3822256..	2.0469969..	32	8055300	10	3	0.3818
1.3794634..	2.0469969..	39	8055300	77	49	0.6124
1.3793895..	2.0469969..	32	8055300	25	4	-0.34
1.3582469..	2.0469969..	56	8055300	13	17	0.4215
1.3558963..	2.0469969..	32	8055300	1910	382	0.4939
1.3551730..	2.0469969..	32	8055300	766	270	0.9217
1.3997216..	6.0578947..	8360	7858019	53	7	0
1.3984441..	6.0578947..	32	7858019	65	13	Nulo
1.3946336..	6.0578947..	8372	7858019	87	18	0.0772
1.3879381..	6.0578947..	58	7858019	110	27	Nulo
1.3853678..	6.0578947..	43	7858019	33	6	Nulo
1.3845197..	6.0578947..	32	7858019	1080	411	0.296
1.3843099..	6.0578947..	147	7858019	36	3	-0.1779
1.3841485..	6.0578947..	49	7858019	37	3	0.4404

To view the complete list of tweets from the subsample labeled as "true," download the following files:

[Table - true user tweets.png](#)

[Table - true user tweets.csv](#)

The following graph shows the ratio of followers, favorites (likes) and retweets, as well as the main accounts labeled as "true."
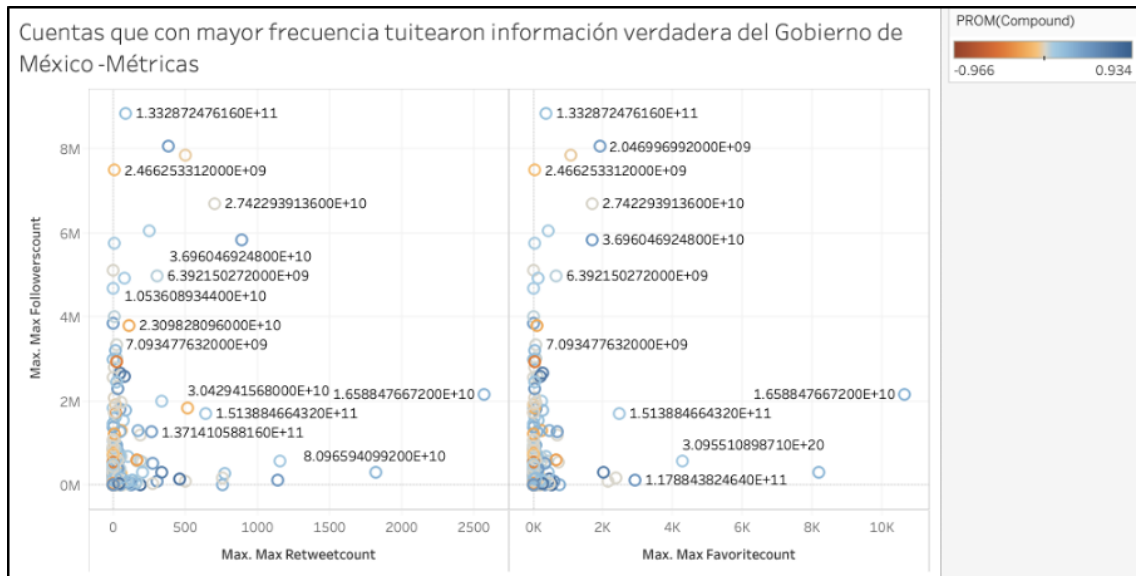
The graph shows the tweets labeled as "true" in the federal government subsample. The y-axis represents the maximum number of followers of the author of the tweet, the first x-axis represents the maximum number of favorites (likes) of the tweet, and the second x-axis represents the maximum number of retweets. Each point shows the name of the author of the tweet, and the color of the point represents the compound value in scale (red for negative compound values and blue for positive compound values).

Ranking of users showing anti-federal government tendencies tagged as "misinformation+disinformation."

Cuentas que con mayor frecuencia tuitearon información contra +mis +dis information del Gobierno de México

PROM(Compound)
-0.751   0.807

Id-Tweet	Author Id An	Queryid	Max Foll..	Max Favorit..	Max Retwe..	Compound	
1.37007461893E+18	3.798028500E+10	44	86012	1	1	0.4779	
1.34248348768E+18	3.863378600E+10	29	76297	2	0	-0.5859	
1.37997756977E+18	8.320115000E+11	39	11448	0	2	0	
1.38930502587E+18	2.998028900E+10	8372	5607	1	1	0	
1.37554233973E+18	1.198333600E+11	229	3715	1	1	0	
1.38300575104E+18	2.221212200E+10	155	2495	2	1	0.296	
1.35492376857E+18	2.284805200E+10	49	1347	0	0	-0.7506	
1.38243680625E+18	3.012391500E+20	8346	1048	16	3	0.3182	
1.38057877348E+18	6.915574900E+10	8348	1006	0	0	0.7783	
1.37922948558E+18	3.150768100E+20	39	848	1	1	0.4404	
1.35229870162E+18	3.160606200E+10	29	730	1	1	0	
1.38222017837E+18	4.814498100E+10	8346	473	0	0	0.8074	
1.35484722049E+18	5.544114500E+11	36	463	0	0	0	
1.34360275011E+18	7.707418800E+10	29	369	1	0	0	
1.35466022294E+18	5.183544800E+10	39	332	0	0	0.7506	
1.35516312674E+18	4.397340700E+10	51	71	0	1	-0.5563	
1.38826418436E+18	2.399802700E+20	8366	44	1	1	0	
1.38827361997E+18	2.999266500E+20	8366	14	0	0	Nulo	
1.38233080630E+18	3.483359000E+20	8346	14	5	1	0	
1.35527301358E+18	8.319708900E+10	49	12	0	0	0	
1.38827312252E+18	3.476999800E+20	8366	11	0	0	Nulo	
1.40384096596E+18	3.041616800E+20	8338	6	0	0	Nulo	
1.38826394267E+18	3.388614300E+20	8366	5	0	0	Nulo	
1.36456496523E+18	5.715234900E+11	8365	5	0	0	0.7184	
1.38825635611E+18	3.324706600E+20	8366	2	0	0	Nulo	
1.38832074396E+18	3.551889600E+20	8366	-1	0	0	Nulo	
1.38831505586E+18	3.542135600E+20	8366	-1	0	0	Nulo	

The following graph shows the ratio of followers, favorites (likes), and retweets, as well as the main accounts labeled as exhibiting trends in opposition to the federal government + disinformation + misinformation.
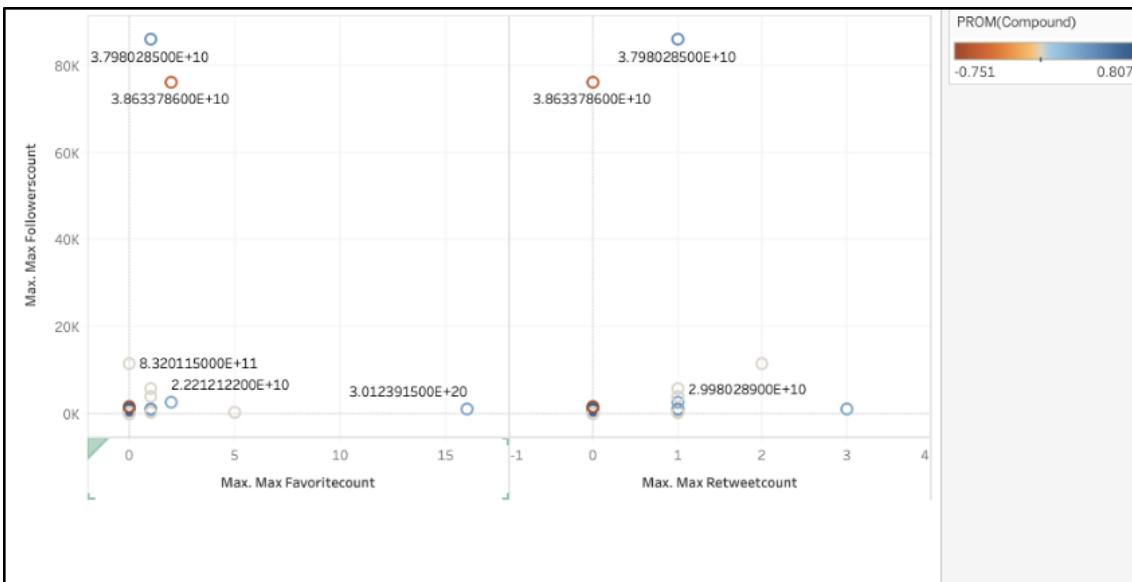
This graph shows the tweets in the federal government subsample labeled as showing tendencies in opposition to the federal government. The y-axis represents the maximum number of followers of the author of the tweet, the first x-axis represents the maximum number of favorites (likes), and the second x-axis represents the maximum number of retweets. Each point shows the screen name of the author of the tweet, and the color of the point represents the compound value in scale (red for negative compound values and blue for positive compound values).

Ranking of users showing tendencies in support of the federal government tagged as "misinformation+disinformation."

Id-Tweet	Author Id An	Queryid	Max Follow..	Max Favorit..	Max Retwe..	Compound	
1.355628658E+18	3.2523768E+11	44	280001	1654	423	0.0382	
1.355748667E+18	2.5919942E+20	46	1046	0	0	-0.296	
1.367461228E+18	2.3136040E+20	55	491	2	1	0	
1.377751199E+18	3.1956122E+20	8313	549	0	0	0.5106	
1.377755490E+18	3.3202947E+20	8313	561	1	3	0.5574	

Cuentas que con mayor frecuencia tuitearon información pro +mis +dis information del Gobierno de México

PROM(Compound)
-0.2960   0.5574

The following graph shows the relationship between followers, favorites (likes), and retweets, as well as the main accounts tagged as trends in support of the federal government + disinformation + misinformation.
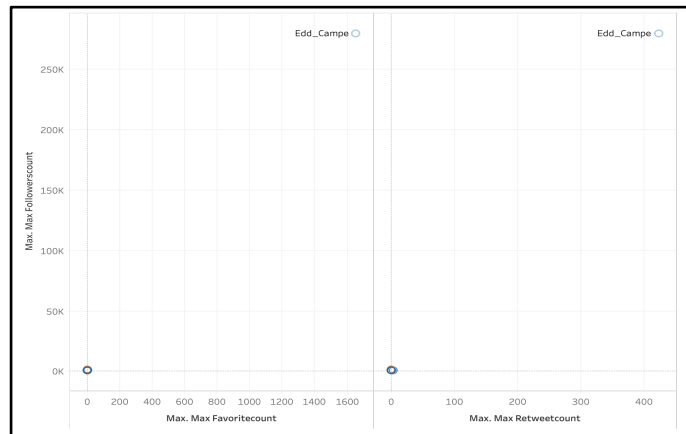
The graph shows the tweets in the federal government subsample tagged as trends in support of the federal government, as well as "misinformation and disinformation." The y-axis represents the maximum number of followers of the author of the tweet, the first x-axis represents the maximum number of favorites (likes), and the second x-axis represents the maximum number of retweets. Each point shows the screen name of the author of the tweet, and the color of the point represents the compound value in scale (red for negative compound values and blue for positive compound values).

These rankings are useful because they create a taxonomy of groups. Once the groups are sorted, we examine with further detail to determine specific users and tweets that illustrate the categories of intentions and emotions (To explore the dashboard for these rankings in Tableau, visit the following link). However, it is worth noting that the results correspond exclusively to the limited sample of 20,00 tweets. Therefore, it is not possible to assume that these accounts disseminate misinformation or disinformation news systematically or continuously. This would require a longitudinal study and the consideration of other factors beyond the scope of this study.

Below we present some tweets with mixed characteristics to demonstrate the network analysis, in conjunction with the rankings of intentions and emotions of users in the network.

Examples of specific tweets and users with intentions and emotions

- Misinformation+disinformation with high levels of negativity **in opposition to the federal government.**

    1. <u>User</u>: @Ejemplo1

- Displays tendencies in opposition to the federal government with a high degree of polarization.

    1. <u>User</u>: @Ejemplo2

For this report, an application was developed using the 3D-force-graph library to connect to the mass download database and track who retweeted this post in the broader universe. We found that some of the users who retweeted tend to retweet highly polarized content. The following image shows how we identified the user "@Ejemplo3" who incidentally has the characteristic of a username ending with 8 digits, just like the generic accounts we found in Alfredo del Mazo's network.

And the content it retweets:

Thus, a particular example illustrates how accounts with a high degree of polarization can be detected and tracked. Ironic, aggressive, and all-caps language can be seen in these tweets, emphasizing their provocative nature. The degree of detail is possible by the use of tags and applying a methodical approach: first, identifying users with clear intentions, who have public profiles with higher influence (number of followers, favorites, mentions, etc.); and second, reviewing who retweets or interacts with users the most.

In addition, these users meet some criteria of suspicious accounts (they have eight digits at the end of their username). This helps us understand how some accounts create and amplify polarizing rhetoric, whether it be in support of or against the federal government.

The following cases exemplify the political use of Twitter in Mexico by **accounts that support the federal government**:

User: @Ejemplo4

Below are two more examples of tweets from a user that sympathizes with the federal government, but that have a high level of negativity.

User: @Ejemplo5

These two posts are examples of tweets with high negativity, but in favor of the government and against the opposition, while simultaneously showing support for AMLO with the hashtag #FuerzaPresidente. Foul language, the use of all-caps text, and provocative language against the president's opponents are recurrent themes.

Examples such as these are numerous. For this case study, the network visualization is divided into categories of intent and emotion to examine the user with greater detail, and to better understand the stakeholders involved and the degree of polarization in the network.

Finally, we will present conclusions, implications, and recommendations for better assessing the intentions and emotions of the public conversation on Twitter.

IMPLICATIONS AND CONCLUSIONS

Social networks have become so deeply woven into our lives that they are beginning to shape our identities.[81] Twitter, in particular, has become one of the main political arenas throughout much of the world. The possibility of having citizens, government leaders, media, and social groups interacting with each other was inconceivable only a couple of decades ago. The scale at which these conversations take place escapes traditional analysis, and simultaneously requires a public policy approach and computational tools.

In this section, we explore through network analysis how two identified behaviors could have negative consequences for Mexico's democratic and geopolitical climate. Our analysis includes a possible campaign highlighting the accomplishments of the government of the State of Mexico, headed by Alfredo del Mazo and the suggestion of a taxonomy of intentions and emotions in opposing groups in favor and against the federal government led by President López Obrador. In such groups, sentiment analysis can be used to detect signs of polarization. Below, we present a narrative analysis to further explain what type of content is generated to influence the federal government's handling of the pandemic positively or negatively.

Narrative analysis

Social networks are a space for the dissemination of information and events in real-time as well as an environment conducive to debate. Discussion, the debate of ideas, and the search for common ground strengthen the sense of belonging to a community and are the foundation on which democratic systems are built. However, in an ecosystem of polarization such as the one Mexico is experiencing—which is linked to historical factors such as inequality, poverty, and the lack of opportunities for development, as well as to the polarizing actions and statements by President López Obrador—the discussion on social networks becomes a struggle between factions, without possibility of consensus or conciliation.

Earlier we referenced the clash between supporters of President López Obrador and critics of his administration. In a polarized environment, both factions have taken the reins of the discussion on social networks, minimizing the voices of users who do not identify with either faction (those who consider that, in a heterogeneous society, there is room for a

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[81] Bail, C. (2021). Breaking the Social Media Prism: How to Make Our Platforms Less Polarizing. Princeton University Press.

broad spectrum of thought and not everything is "black" or "white"). Neutrality, as well as critical and objective thinking, are weakened in highly polarized societies.

Given this context, this section will provide a concrete analysis of the main topics or narratives that both factions have promoted during the pandemic. The narratives glorify the government administration, minimize government critics, point out the mistakes of the current administration in dealing with the pandemic, and misinform in order to strengthen or weaken the image of the federal government.

Highlighting governmental accomplishments and praising the federal government's strategy for dealing with the pandemic.

One of the guiding principles of the network supporting the López Obrador government has been the promotion of the administration's positive achievements in managing the health crisis. Their intention is to highlight positive elements while also diverting the narrative from negative aspects and mistakes. The language of the tweets selected to exemplify this narrative is optimistic and, in most cases, use adjectives and phrases to question the president's critics.

The tweets below were drawn from a classified sample of 20,000 tweets, which was manually analyzed to increase the accuracy of the tool developed by our technical team. The first tweet shares accurate information that refers to the progress made in the vaccination campaign. At the beginning of January 2021, Mexico was at the forefront of the vaccination of health personnel in Latin America.[82] However, accounts in favor of the federal government use ironic questions to refer to the criticisms made around the vaccination process, adding a hashtag in support of the president's political agenda (i.e., the "Fourth Transformation" (in Spanish, "Cuarta Transformación"). [**Fig. 19**]

Figure 19. Source: Twitter

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[82] Expansión (2021, January 5). México, el primer lugar en América Latina en más vacunas aplicadas. Expansión Expansion Politics. https://politica.expansion.mx/mexico/2021/01/05/mexico-el-primer-lugar-en-america-latina-en-mas-vacunas-aplicadas

The second tweet using this narrative refers to the statements made by Martha Delgado Peralta, Undersecretary for Multilateral Affairs and Human Rights of the Ministry of Foreign Affairs, who affirmed on December 23, 2020, that Mexico was one of the first ten countries in the world to receive and begin administering the Pfizer-BioNTech vaccine.[83] The last sentence of the tweet allows us to identify language used by the president, who in his press conferences has reiterated that public funding is producing results since it is not used to pay off critical journalists.[84] [*Fig. 8*]

Figure 20. Source: Twitter

The third tweet selected deliberately shares false information (disinformation) with the purpose of echoing the presidential discourse and criticizing the main opposition parties. It shares two false statements: it indicates that Mexico was the fifth country in the world to get the vaccine from the German pharmaceutical company (a statement that cannot be confirmed by any media) and insists that the federal government has not gone into debt at all, when even the Ministry of Finance and Public Credit has specified that during the pandemic, the debt ceilings have not been exceeded, which means that it continued acquiring debt, although within the limits established by Congress.[85] [*Fig. 21*]
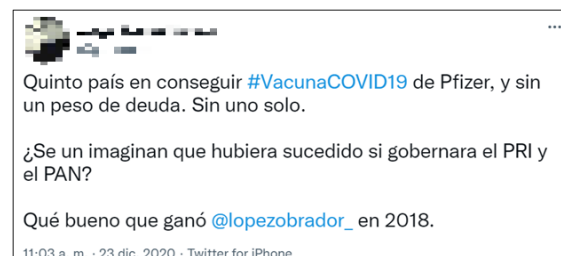
Figure 21. Source: Twitter

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[83] Ministry of Health (2020, December 23). México recibe primer embarque de vacunas Pfizer-BioNTech contra el virus SARS-CoV-2. Government of Mexico. https://www.gob.mx/salud/prensa/mexico-recibe-primer-embarque-de-vacunas-pfizer-biontech-contra-el-virus-sars-cov-2-260177?idiom=es

[84] Office of the President (2021, August 16). Stenographic version of the press conference with President Andres Manuel López Obrador on August 16, 2020. Government of Mexico https://www.gob.mx/presidencia/es/articulos/version-estenografica-conferencia-de-prensa-del-presidente-andres-manuel-lopez-obrador-del-16-de-agosto-de-2021?idiom=es

[85] Ministry of Finance and Public Credit (2021, August 30). Informes sobre la Situación Económica, las Finanzas Públicas y la Deuda Pública al segundo trimestre de 2021. Press release, No. 045. https://www.secciones.hacienda.gob.mx/work/models/estadisticas_oportunas/comunicados/ultimo_boletin.pdf

Attacking critics of the government's handling of the pandemic

Another narrative that has been promoted since the beginning of the COVID-19 pandemic is the attack on government critics, particularly those who have highlighted the failures of the government's approach to the pandemic. The language used in the selected tweets seeks to undermine the criticisms made by opposition politicians, media, journalists, and civil society leaders. Likewise, this narrative seeks to blame management of the pandemic on other actors, such as governors and representatives from parties that oppose the federal government.

The first selected tweet questions critics of the Undersecretary of Prevention and Health Promotion, Hugo López-Gatell, who has been the public figurehead of the national strategy against the coronavirus. Since he is the face of the federal government during the pandemic, citizens attribute the responsibility of the management of the pandemic to López-Gatell and focus their criticism on him and President López Obrador. The tweet refers to a series of protests against the federal government that took place in 2020, which called for his resignation.[86] [*Fig. 22*]

Todos esos que culpan al Doctor Hugo López-Gatell, de negligente ante el Covid19, son los mismos que se forman para realizar sus mini caravanas cada 15 días. Mejor cuídense, y quiéranse tantito.

3:25 p. m. · 11 jul. 2020 · Twitter for Android

Figure 22. Source: Twitter

The second tweet following this narrative exemplifies the way in which users sympathetic to the federal government attack specific individuals for their criticism of government errors. TV Azteca correspondent Irving Pineda participated in the president's morning press conference on August 7, 2020. The reporter questioned President López Obrador regarding changes in government actions after having surpassed the threshold of 50,000 deaths, as well as whether or not he was considering keeping Undersecretary López-Gatell in charge of the strategy to combat the pandemic.[87]

When questioned, the President indicated that the federal government has handled the pandemic responsibly, based on the strategies proposed by health specialists. He also assured that Mexico was in a precarious situation due to prominent health conditions of the population (e.g., diabetes, hypertension, and obesity), as well as the lack of infrastructure and health supplies inherited from previous administrations. Hours after the press conference, users supporting the government questioned the correspondent Irving Pineda and the television network. They referred to the controversy that broke out months

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[86] Reforma (2020, July 11). Realizan cuarta caravana anti AMLO en el país. National News. https://www.reforma.com/realizan-cuarta-caravana-anti-amlo-en-el-pais/ar1985681
[87] Office of the President (2021, August 7). Stenographic version of the press conference with President Andres Manuel López Obrador on August 7, 2020. Government of Mexico. https://www.gob.mx/presidencia/articulos/version-estenografica-conferencia-de-prensa-del-presidente-andres-manuel-lopez-obrador-del-7-de-agosto-del-2020?idiom=es

before when a TV Azteca host asked the audience not to "pay attention" to Hugo López-Gatell (due to the discrepancies between the official pandemic figures presented by the federal government and those reported by state governments).[88] [***Fig. 23***]

El corresponsal de ▪▪▪▪ @▪▪▪▪▪▪▪ le pregunta al Presidente sobre las 50,000 muertes por COVID y nada dice de cuántas muertes hay que atribuirle a su televisora y a su periodista estrella @▪▪▪▪▪▪▪ con lo de "No le haga caso a Gatell" ¿Ya se les olvidó?

9:19 a. m. · 7 ago. 2020 · Twitter for iPhone
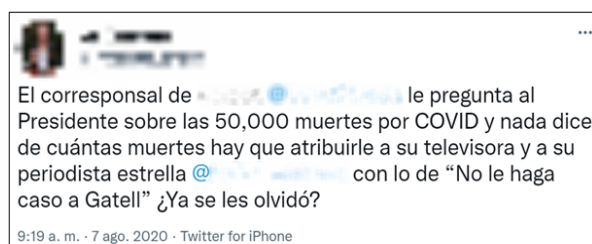
Figure 23*. Sources: Twitter*

The last tweet selected demonstrates the use of disinformation to question critics of the federal government. During 2020, several governors from opposing political parties questioned the federal authorities' strategy for dealing with the pandemic (from the lack of investment in medical supplies, lack of basic infrastructure, as well as insufficient economic support and subsidies to alleviate the effects of the economic crisis).

The conflict between the federal government and some state leaders developed in 2019 and only intensified with the pandemic.[89] The selected tweet refers to the statement made in mid-August 2020 by the governors that make up the "Alianza Federalista" ("Federalist Alliance"), in which they specified that no government—state or municipal—has the capacity to face the health crisis without coordination and dialogue with the federal government.[90] The selected tweet shares misleading information, as its wording seeks to make the audiences recognize the supposed failure of the governors, when in reality they only asked the federal government to work in coordination with state governments. [***Fig. 24***].

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[88] Animal Político (2020, April 18). Azteca llama a no hacerle caso a Hugo López-Gatell; AMLO pide seguir las recomendaciones. Animal Político. https://www.animalpolitico.com/2020/04/tv-azteca-pide-no-hacerle-caso-a-hugo-lopez-gatell/

[89] BBC News (2020, June 3). Coronavirus en México: ¿por qué AMLO enfrenta una rebelión de gobernadores en la etapa crítica de la pandemia de COVID-19? BBC World News. https://www.bbc.com/mundo/noticias-america-latina-52900134

[90] The Alianza Federalista (Federal Alliance) is comprised of the governors of Aguascalientes, Chihuahua, Coahuila, Colima, Durango, Guanajuato, Jalisco, Michoacán, Nuevo León and Tamaulipas (Alianza Federalista, 2021); La Jornada (2020, August 16). Admiten gobernadores de oposición incapacidad frente a la actual crisis. La Jornada—Politics. https://www.jornada.com.mx/2020/08/16/politica/009n1pol

Figure 24. Source: Twitter

Minimizing government errors

This narrative generally adds to attacks against government critics who have highlighted government mistakes throughout the pandemic. To downplay errors in the handling of the pandemic, accounts supporting the federal government blame other actors, especially opposition politicians.

The first tweet under this narrative seeks to divert attention away from the trickle-down arrival of the COVID-19 vaccine, whose production was insufficient to meet global demand. While it is true that the vaccine shortage was widespread and not just a situation unique to Mexico, the tweet criticizes the president's "detractors" for highlighting the vaccine shortage (rather than simply stating that the shortage is worldwide). The language of the tweets in this narrative seeks to limit the degree of responsibility of the federal government in the handling of the pandemic. [*Fig. 25*]
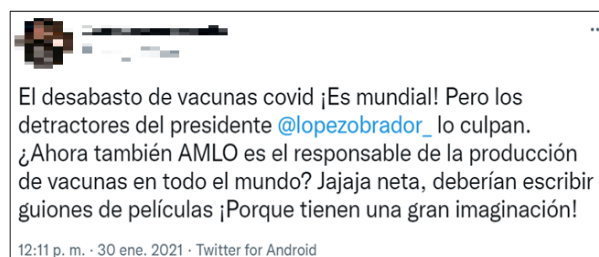
Figure 25. Source: Twitter

The second tweet criticizes the opponents of the López Obrador government in order to deflect questions about the high number of deaths in the country. Following the presidential address in which opposition politicians were blamed for having taken advantage of the health crisis, users sympathetic to the federal government have questioned the national opposition of politically profiting from the pandemic. The fact that government critics point out the negative results of the handling of the pandemic is reason enough to assure that there is political intentionality behind the questioning. [*Fig. 26*]

Figure 26. Source: Twitter

The third tweet in this narrative exemplifies the use of false information for political purposes. The user shares information related to the federal government by repeating the presidential discourse of blaming the president's predecessors as the real culprits of the problems faced by the country. While the tweet refers to the privatization of public goods that have occurred in previous six-year terms, the author of the tweet blames the former presidents for the deaths caused by the pandemic. Likewise, the tweet is misleading because it does not specify concrete evidence or proof that the former presidents did not invest in hospital infrastructure and health personnel. [*Fig. 27*]

Figure 27. Source: Twitter

Highlighting the errors of the government

The fourth narrative analyzed relates more to users critical of the federal government, who have used social media to point out the errors in government oversight of the fight against COVID-19. It is worth mentioning that the majority of the tweets identified with this narrative share accurate information, using language critical of government policy. Nonetheless, like the narratives described above, some users share disinformation in order to critique the government.

The first of the tweets selected in this category refers to the number of deaths in Mexico as a result of the health crisis. It is worth noting that on the date the tweet was posted,

authorities of the Ministry of Health reported a total of 192,488 deaths due to COVID-19.[91] Official figures are reason enough to question the strategy led by the federal government by comparing the number with that of other countries. Likewise, the user alludes to a phrase used by López Obrador days after the health emergency was issued, which generated a wave of criticism due to his insensitivity.[92] [*Fig. 28*]

Figure 28. Source: Twitter

The second tweet using this narrative refers both to the high number of deaths and to a phrase used by President López Obrador. On February 11, 2021, the Ministry of Health reported a total of 171,234 cumulative deaths (adding 1,474 new deaths in the previous 24 hours) during a critical second wave of infections.[93] The post uses a phrase from the president[94] to contrast his optimism with a reality of an increase in infections and deaths [*Fig. 29*].
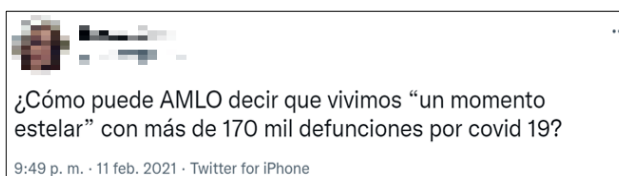
Figure 29. Source: Twitter

The last tweet chosen with this narrative, refers to the increase in deaths and lack of vaccines in the context of the second wave of infections, but also uses false information to strengthen its case. The user cites a tweet by Undersecretary of Health López-Gatell to show the number of cases and deaths recognized by the health authority, although he indicates that the "code blue" was activated due to lack of supplies, when there is no such code; this is disinformation. [*Fig. 30*]

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[91] Forbes México (2021, March 10). Salud reporta 192,488 muertes acumuladas por COVID-19 en México. Forbes Staff—News. https://www.forbes.com.mx/salud-reporta-192488-muertes-acumuladas-por-COVID-19-en-mexico/

[92] On April 2, 2020, President L Obrador assured that the pandemic was a "transitory crisis," and that "it will not take long and we will come out stronger because they will not make us change our goal of putting an end to corruption [...] this opportunity fits like a glove to strengthen the transformation" (Presidency of the Republic, April 2, 2020).

[93] El Economista (2021, February 11). México supera las 171,000 muertes por COVID-19. El Economista-Política. https://www.eleconomista.com.mx/politica/Mexico-supera-las-171000-muertes-por-COVID-19-20210211-0100.html

[94] On August 25, 2020, the president indicated that his government is going through "an important, **stellar moment** in the history of Mexico and we must see the positive, we Mexicans have a great opportunity to banish corruption" (Office of the President, August 25, 2020).

Figure 30. Source: Twitter

Criticism of the handling of the pandemic and the negligence of authorities

This narrative shares characteristics with the one described in previous paragraphs by highlighting the government's mistakes; it implicitly (or explicitly) criticizes government management. However, it questions the government's strategy towards the pandemic in general and specifically mentions the omission and negligence of the authorities.

The first tweet selected is published in the middle of the second wave of infections, a period in which new records were registered daily due to the increase in infections and deaths. On January 14, 2021, the date on which the tweet was published, the federal government confirmed a total of 16,468 new infections, a new record since the pandemic began.[95] The user blames Undersecretary López-Gatell for the high number of registered infections, which blames the negligence of the health authorities. [***Fig. 31***]

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[95] Animal Político (2021, January 14). Con 16 mil 468 nuevos casos y 999 fallecimientos, México rompe récord de contagios COVID. Animal Político. https://www.animalpolitico.com/2021/01/mexico-rompe-record-nuevos-casos-covid-muertes/

The second tweet refers to the moment when authorities confirmed a total of 100,104 deaths due COVID-19, a fact that was widely disseminated by the media and other accounts in general.[96] This figure generated a series of criticisms from users on social networks who blame the federal authorities—in particular, the person responsible for the pandemic strategy, Hugo López-Gatell—for the infections and deaths. In this particular case, the account refers to the number of deaths and also calls for the resignation of Undersecretary López-Gatell. [***Fig. 32***]

Figure 32. Source: Twitter

The third tweet uses misleading information to explain the limited delivery of coronavirus vaccines. The user refers to the foreign policy of the federal government in relation to its rapport with the Donald Trump administration. However, the user speculates on the matter, assuring that the current government under President Biden has restricted the shipment of vaccines to Mexico (when there was a deficit in the production of vaccines at an international level at the beginning of the year) because of having maintained such relationship with the former U.S. president. [***Fig. 33***]

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[96] Forbes México (2020, November 19). 100 mil muertes por COVID-19 en México. Forbes Staff-Actualidad. Forbes Staff-News.https://www.forbes.com.mx/noticias-100-mil-muertes-COVID-19-mexico/

La escasez de vacunas en México contra el Covid es el primer resultado de la decisión del presidente de jugársela a todo o nada con Trump en la histórica elección presidencial estadounidense de 2020. Histórico es igualmente el desastre de la decisión.

Atole Casa Blanca
Los próximos cuatro años de relación con Washington estarán signados por la apuesta all-In del presidente mexicano por el candidato perdedor. Por eso, hoy Canadá tiene ...

10:01 p. m. · 5 mar. 2021 · Twitter for iPhone

Figure 33. *Source: Twitter*

López Obrador's infection and related speculation.

On January 24, 2021, President López Obrador shared on his social networks that he had tested positive for COVID-19, stating that the then-Minister of the Interior, Olga Sanchez Cordero, would be responsible for the morning press conferences and that he would have a conversation the following day with his Russian counterpart to request the Sputnik V vaccine.[97] After this announcement, the president did not appear publicly until he shared a video on his social networks on January 29.[98] Due to the president's absence, a series of questions and speculations arose regarding his state of health.

The first tweet selected under this narrative expresses an opinion on the lack of information regarding the president's state of health, which is a matter of public interest as he is the head of the executive branch. The account shares a video[99] referring to the saturation of hospitals, the increase in the number of infections and deaths at national level, the contradictory messages in the presidential discourse (i.e., not using masks and touring during the second wave of infections) and, in particular, the lack of transparency of the authorities in reporting on the president's state of health. [**Fig. 34**]

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[97] Andres Manuel López Obrador Press Room (2021, January 24). Presidente da positivo a COVID-19; "estoy optimista, saldremos adelante,"", afirma. January 24, 2021. https://lopezobrador.org.mx/2021/01/24/presidente-da-positivo-a-COVID-19-estoy-optimista-saldremos-adelante-afirma

[98] El País (2021, January 30). López Obrador reaparece tras contagiarse de covid con la promesa de superar la pandemia en México. El País—México. https://elpais.com/mexico/2021-01-30/lopez-obrador-reaparece-tras-contagiarse-de-covid-con-la-promesa-de-superar-la-pandemia-en-mexico.html

[99] Link to the video in which @Ferbelaunzaran shares a critical analysis of the situation: https://twitter.com/ferbelaunzaran/status/1354779162796417034.

Figure 34. Source: Twitter

As part of this narrative, the speculation generated a series of tweets that shared misinformation regarding the president's state of health. It is worth noting that the information vacuum on the part of the government was a favorable scenario for the dissemination of fake news.

The second tweet as part of this narrative shares an op-ed[100] from an unknown media outlet in which two possible scenarios regarding the president's health situation are specified: (1) López Obrador is not sick (due to the presumed fall in popularity, a "desperate plan" had to be implemented to recover his popularity) and (2) López Obrador has COVID-19 (as a consequence of his irresponsible actions in the face of the pandemic). Given that the authorities and the media in general confirmed the president's infection, the statement about his "desperate plan" to boost his popularity deliberately misinforms. [**Fig. 35**]

Figure 35. Source: Twitter

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[100] Link to the article written by @piperthread: https://conxiones.com/covid-en-amlo-una-bala-en-el-pie.

The last tweet with this narrative also shares misleading information. The user criticizes the government's strategy for dealing with the pandemic, stating that it led to an increase in infections (in the context of the second wave) and the demand for oxygen tanks for severe cases. However, in addition to the criticism against the administration, the user assured that the president "does not have Covid" and that he just "took a vacation." [**Fig. 36**]

Figure 36.

The case of CanSino: its effectiveness

To conclude the analysis of the main narratives identified, a couple of examples will be presented around the information shared by multiple media outlets in which it was stated that the Chinese vaccine of the pharmaceutical company CanSino Biologics lost effectiveness after six months of being applied, which would make a second dose necessary.[101] Days later, CanSino Biologics clarified that although the media had been informed that effectiveness decreases to 50 percent after six months, the vaccine would still protect against severe cases, hospitalizations, and deaths, indicating that a booster would eventually be needed, although the precise time range has not yet been determined.[102]

On this note, in the days between the news about the decrease in effectiveness and the clarification from CanSino Biologics, a number of tweets sharing false information emerged, albeit not deliberately (misinformation). The two examples below share misinformation (not disinformation) as they merely echoed information that was relevant

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[101] El Financiero (2021, May 22). CanSino, vacuna elegida para inmunizar a profesores en México, pierde efectividad en seis meses. Health section. https://www.elfinanciero.com.mx/salud/2021/05/22/cansino-vacuna-elegida-para-inmunizar-a-profesores-en-mexico-pierde-efectividad-en-seis-meses/

[102] Forbes México (2021, May 25). ¿Vacuna de CanSino pierde efectividad a los 6 meses? La farmacéutica china responde. Forbes Staff—News. https://www.forbes.com.mx/vacuna-de-cansino-pierde-efectividad-a-los-seis-meses-la-farmaceutica-china-responde/

at the time and would be corrected days later. It is important to mention that the federal government applied the CanSino vaccine to all education workers in the country.

The first tweet uses the information for political purposes, as it not only shares information about the lack of effectiveness of the vaccine after six months (the information that was circulating at the time), but adds a phrase and hashtag questioning the government's decision to apply the CanSino vaccine and calls to vote against the government in the June 6 congressional elections. [*Fig. 37*]

Veo que todas las vacunas con las que se ha vacunado a los maestros son Cansino y que son efectivas solo por 6 meses.

Que manera de dar atole en jeringa.

#YaPerdioPorqueYoVotare

A los 6 meses, la vacuna CanSino pierde su efectividad de 75%
El Instituto Nacional de Ciencias Médicas y Nutrición, que coordina el ensayo clínico con el biológico chino, informó a los voluntarios de la disminución en la inmunidad

10:25 p. m. · 24 may. 2021 · Twitter Web App

Figure 37. Source: Twitter

The second tweet adds to the spread of misleading information regarding the CanSino vaccine. Although it merely shared the information that was circulating at the time regarding the effectiveness, it does intend to generate further skepticism among school staff who were vaccinated. [*Fig. 38*]

Malas noticias para los maestros, la vacuna CanSino dicen pierde efectividad a los seis meses, justo en pleno ciclo escolar.

CanSino, vacuna elegida para inmunizar a profesores en México, pierde efectividad en...
Después de cinco o seis meses, la vacuna ofrece una protección al 50 por ciento, de acuerdo con la empresa china.

9:12 p. m. · 25 may. 2021 · Twitter Web App

Figure 38.

As observed in the tweets described in the previous paragraphs, the two main factions mirror the phenomenon of polarization that Mexico is currently facing. The clash on social networks shows the political use of key moments during the health emergency, since each side promotes its political view, whether it be by questioning critics of the federal government and minimizing the government's mismanagement of the pandemic, or

highlighting governmental shortcomings and criticizing the negligence of Mexican authorities. While most cases share truthful information (albeit with a clear political or ideological bias), misleading information is also used to strengthen each political stance.

Following examples of the main narratives (in the context of COVID-19) that have been promoted by the two main factions, the next section presents the case of the state of Nuevo León. This analysis is meant to exemplify the political use of social networks at the state level.

State-level case study: An analysis of the electoral race in Nuevo León.

Background

On June 6, 2021, congressional midterm elections were held in Mexico. In addition, 15 states held local elections for governor. One of the local elections that generated the greatest interest in the national press was that of the state of Nuevo León.

The attention was due to a combination of factors. First, Nuevo León is an industrialized state with an economy tied to trade with the U.S., where the traditional left has never had a major presence.

Second, President López Obrador's left-wing MORENA (National Regeneration Movement) party nominated Clara Luz Flores as its candidate for governor. Clara Luz is a popular mayor of a municipality in the urban periphery of the metropolitan area of Monterrey, the capital of the state of Nuevo León. She forged her political career with the PRI, the old hegemonic party in Mexico during the 20th century, and now one of the great nemeses of AMLO's "Fourth Transformation."

During the months prior to the election, Clara Luz led the public opinion polls and was the favorite at the beginning of the campaigns. For the first time, a leftist party, MORENA, seemed to have a real opportunity to win an election in this important state.

There were three opposition candidates running against Clara Luz Flores in this election: Adrian de la Garza, the Mayor of Monterrey (PRI); Fernando Larrazabal, former Mayor of Monterrey (PAN); and Senator Samuel García, member of the Citizen Movement (Movimiento Ciudadano, MC). The latter quickly distinguished himself from the rest of the candidates for being a nationally known figure with a wide presence on social networks, and for being the protagonist of several controversies related to his private life.

Samuel's campaign was based on his claim as a young but experienced candidate, far from the political class and close to the young electorate. In addition, Samuel is married to a popular influencer on Instagram who played a very active and decisive role in his campaign.

Course of the Political Campaigns

The electoral campaigns began on March 5, 2021. Between March 24 and 25, a national media outlet released a video that closely linked candidate Clara Luz Flores to Keith Raniere, leader of the NXIVM sex cult, who was accused of sexual abuse and is serving his prison sentence in the United States. This event was a turning point in the electoral campaign because the candidate had publicly denied any relationship to Raniere; however, the video exposed Clara Luz as having an important role in the cult.

Opinion polls of several national newspapers reported that Clara Luz's popularity suffered an abrupt fall after this, dropping from first to third place in voter preference.

The drop in Clara Luz's voting intentions benefited Samuel García, who had a notable increase in voter preference. From April until election day (June 2), the election became a two-man race: Samuel García of Movimiento Ciudadano against Adrián de la Garza of the PRI.

Another important development in the campaign was Garza's attack on Samuel García. During the last week of April, Garza's team released a series of photographs linking Samuel García to a family member allegedly involved in drug trafficking. Samuel's response was to claim there was a dirty war against him, to disassociate himself from his relatives and his connections, and to reiterate that he is a candidate foreign to the circles of power that have dominated local politics for the last thirty years. Unlike what happened with Clara Luz's videos, opinion polls showed that this scandal did not have a great impact on Samuel's voting intention.

Towards the end of the campaign, there were two other relevant events: in mid-May, President López Obrador publicly accused Garza of having carried out illegal operations during his campaign, for handing out debit cards to citizens through which they would receive social benefits in the event that he win the election.

By the end of the electoral contest, Samuel García won with a comfortable majority, 37 percent of the vote. Adrián de la Garza received 28 percent of the vote, Fernando Larrazabal received 18 percent and Clara Luz Flores received 14 percent; the rest was divided among other candidates from minority parties.

The Nuevo León election generated national interest in the campaign developments described above. This was reflected on Twitter; in particular, Clara Luz and Samuel generated anger and polarization on social networks through their statements and scandals, which resulted in significant shifts in electoral preference.

We considered this to represent an interesting case to test Twitter content downloading and analysis techniques. This case was a political event with a shorter time frame and a smaller number of relevant actors, compared to the COVID-19 issue. However, it is also another case that generated polarization in public opinion. Additionally, this case study consisted of developing a visual communication tool to share this type of analysis on digital platforms for mass dissemination.

Visual Elements of Analysis[103]

Download of information

The first step consisted of performing a bulk download of tweets related to each candidate using a series of keywords. (Table 3 shows the words used for the download.) The download dates were from March 1 to May 30, 2021, covering the official period of election campaigns. A total of 4.6 million tweets were downloaded for analysis.

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[103] A visualization of these findings can be found at: https://www.mexicovid19.app/sentiment-analysis.

The website is enabled in react.js; its graphics are created in D3. The advantage of this architecture is that the graphics are interactive. This type of architecture was chosen to make it easier for the audience to explore the results of the analysis.

Table 3. Keywords that were used to download content associated with the Nuevo León election.

Candidate	Party/Coalition	Keywords
Fernando Alejandro Larrazabal Breton	National Action Party (*Partido Acción Nacional*, PAN)	- Larrazabal - VotaLarrazabal - PAN NL - FerLarrazabalNL - LarrazabalGobernador - Larrazabal 1200 millones - Larrazabal declina - aNLSeLeRespeta - PANNLMX
Clara Luz Flores Carrales	Together We Will Make History in Nuevo León (*Juntos Haremos Historia en Nuevo León*) (Coalition: Morena, PT, PVEM, Nueva Alianza NL)	- clara luz nuevo león - claraluzflores - VotaClara - VotaMorenaNL - VotaPTNL - VotaNuevaAlianzaNL - VotaPartidoVerdeNL - ClaraGobernadora - NXIVM Clara Luz
Samuel Alejandro García Sepulveda	Citizen Movement (*Movimiento Ciudadano*, MC)	- Samuel García - samuel_Garcías - puro Nuevo León - movimiento ciudadano NL - MovCiudadanoNL - Movimiento Naranja - VotaNaranja - OlaNaranja - MovimientoCiudadano - Viejapolítica - Samuel NL - Ponte nuevo nuevo león
Adrian Emilio de La Garza Santos	Go Strong for Nuevo León (*Va Fuerte por Nuevo León*) (Coalition: PRI and PRD)	- AdrianDeLaGarza - TodoVaAEstarBien - AdrianGobernador - Adrian NL - PRI NL - prinlmx

Figure 39 shows the number of tweets per candidate over time. An interactive visualization of the graph can be found on the aforementioned website.
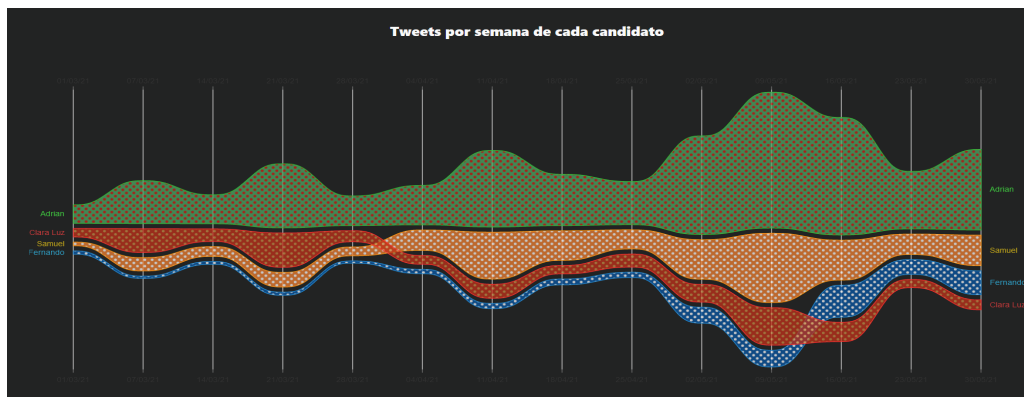
Figure 39. Number of tweets per week and per candidate (March 1 to May 30). Source: Authors' own work. The graph can be viewed at https://www.mexicovid19.app/sentiment-analysis

Figure 39 illustrates that there was a greater amount of content associated with the PRI candidate, Adrian de la Garza. Its highest peak took place from April 25 to May 23. This peak was atypical and was not found among the other candidates; **there was exponential growth and a bubble-like effect.**

Samuel García's case is interesting because it reflects a more organic growth in the number of mentions than that of Garza. It starts with a modest presence that grows gradually throughout the campaign, without bubbles or exponential changes.

Clara Luz Flores started with some presence on Twitter, but as of March 28 (the date coinciding with the video scandals) her presence drops to a minimum. Clara Luz would experience some recovery in her mentions in the last third of the campaign.

Fernando Larrazabal, compared to the other three candidates, had a smaller presence on Twitter throughout the campaign.

Based on the above, we can conclude that the number of mentions is a good indicator to identify atypical behaviors that may be related to organized campaigns aimed at generating polarization or disinformation. For example, the bubble in the last month of Garza's campaign, which had an atypical number of mentions, is striking. In contrast, the trend in mentions of Clara Luz and Samuel García was more organic, in the sense that there was a gradual increase or decrease that can be associated to the increase and decrease of voter preferences during the campaign.

Topic Modeling

For the analyses presented below, we took a randomized sample of one percent of the downloaded texts with keywords, resulting in a selection of 46,000 tweets. The selection was made to facilitate translation to English and the visualization of the results.

Latent Dirichlet Analysis (LDA) topic modeling is part of the analysis framework that the Tec de Monterrey team has been building; this research is ongoing. This technique can be used to automatically identify the topics associated with a selection of texts. This technique classifies and assigns each tweet to a topic from the texts. The tweets in each topic pool share similarities in language use and word combinations. This technique was applied on the random sample of tweets, but applied separately for each candidacy. In other words, the analysis was run on the keywords associated with Samuel García, Clara Luz, Adrián de la Garza and Fernando Larrazabal in order to determine the topics associated with the mentions of each candidate. The graphs presented in this section show the number of tweets associated with each topic over the course of the campaign.

Adrián de la Garza's content was grouped into these five topics: a) promises of government actions; b) posts demonstrating that Adrián was the best candidate; c) participation in the debates and policy proposals; d) attacks on Samuel García, e) López Obrador's attacks on Garza. **Figure 40** presents the evolution of these topics throughout the electoral campaign. The peaks are an increase in mentions associated with a particular topic. The lines represent a different topic.
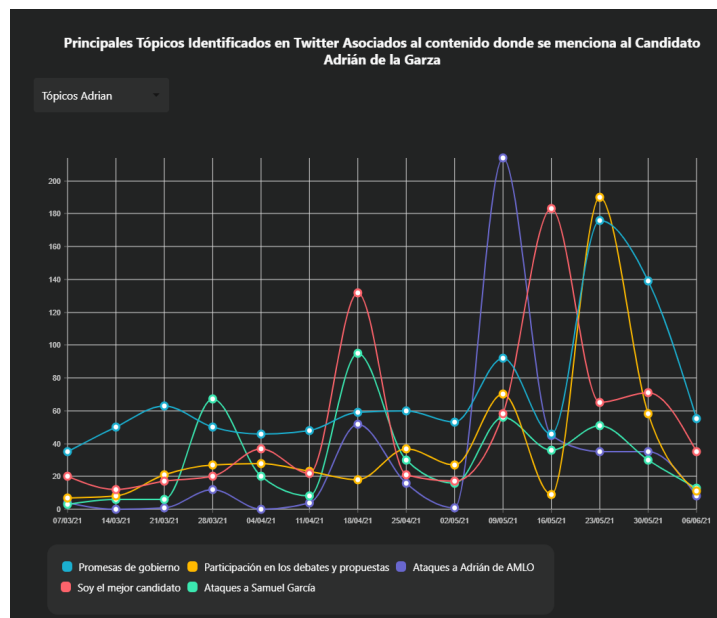
Figure 40. Evolution over time of the number of tweets associated with each topic of Adrian de la Garza's campaign. Source: Authors' own work. The interactive graph can be viewed at https://www.mexicovid19.app/sentiment-analysis

Adrián de la Garza's graph illustrates several interesting cycles. First, the topics of government promises, and participation in debates and policy proposals show a uniform behavior during the campaign between March and May. However, they have a very important peak between the two and three weeks prior to the election. This was linked to the debates and a reinforcement of the candidate's social media strategy focused on disseminating his policy proposals. The attacks on Samuel García associated with Garza's keywords also showed uniform behavior during the campaign.

The outlier event showing a peak in mentions between the first and second week of May was President López Obrador's attacks on Garza. Social networks registered the most

emblematic moments of the PRI candidate's campaign, including the attacks on Samuel García, the attacks received from López Obrador, and his participation in the debates. The behavior of the topics mirrored that of the campaign. Below we explore what happened with the other candidates.

The campaign of MORENA candidate Clara Luz Flores presents a particular pattern that we did not find in any of the other campaigns: there is a positive dominant topic that we call "making policy" that gathers texts related to her campaign activities and public policy proposals. There are other topics identified in her campaign, but with a considerably smaller number of tweets, as shown in **Figure 41.**
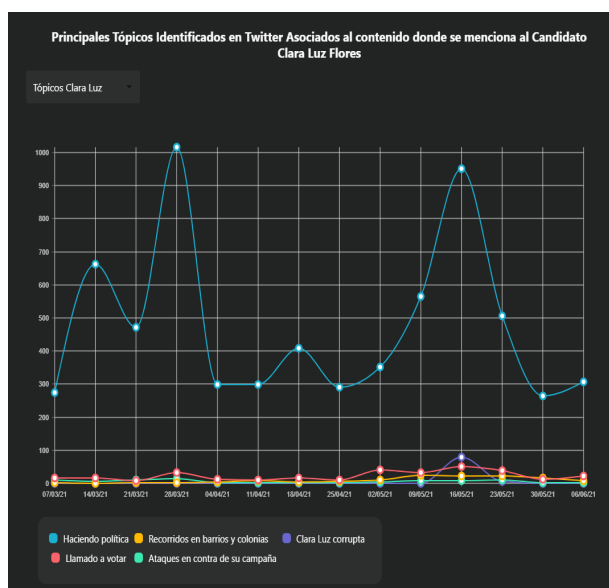
Figure 41. Evolution over time of the number of tweets associated with each topic of Clara Luz Flores's campaign. Source: Authors' own work. The interactive graph can be viewed at https://www.mexicovid19.app/sentiment-analysis.

It is noteworthy that in the case of Clara Luz Flores, no topic related to the video scandal at the end of March that exposed her participation in the NXIVM cult was identified. It is important to clarify that the most plausible explanation is the inability of the LDA algorithm to identify a common pattern in the tweets that contained texts associated with the NXIVM cult and Clara Luz. The team continues to investigate this fact and to calibrate the parameters to rule out other hypotheses.

The case of Fernando Larrazabal is interesting because some topics are seen, but with limited presence during most of the campaign (see Figure 42). There is more activity around these topics during the last month of the campaign, particularly related to Larrazabal's participation in the debates.
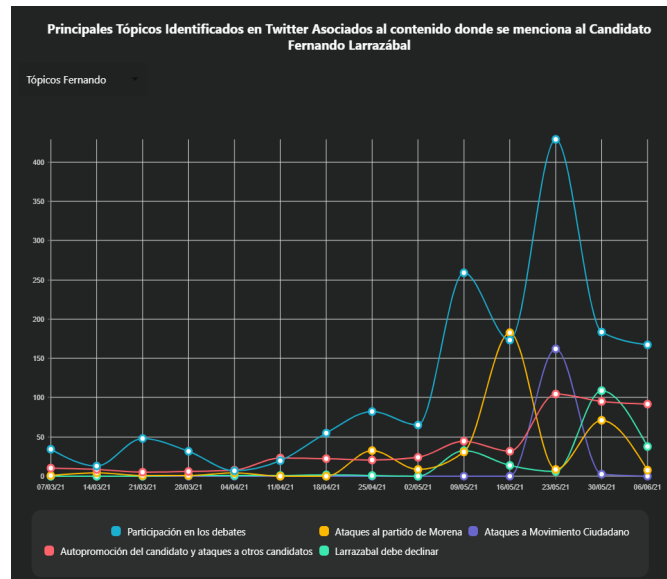
Figure 42. *Evolution over time of the number of tweets associated with each topic of Fernando Larrazabal's campaign. Source: Authors' own work. The interactive graph can be viewed at* https://www.mexicovid19.app/sentiment-analysis.

In the last month of Fernando Larrazabal's campaign, there was a greater frequency of texts attacking the MORENA party, as well as requests for Larrazabal to step down so Garza could face Samuel García with a PAN-PRI coalition.

Fernando Larrazabal had limited presence on social networks during the campaign according to the topic analysis. No atypical patterns are identified as were with Clara Luz's topics.

The case of Samuel García is considered the most relevant in the topic analysis (**see Figure 43**). The five predominant topics in his campaign are: a) accusations of him not being different from his rivals; b) accusation of using illegal money in his campaign; c) attacks on Samuel claiming that he is a corrupt candidate; d) campaign proposals; and e) the candidates' debate.
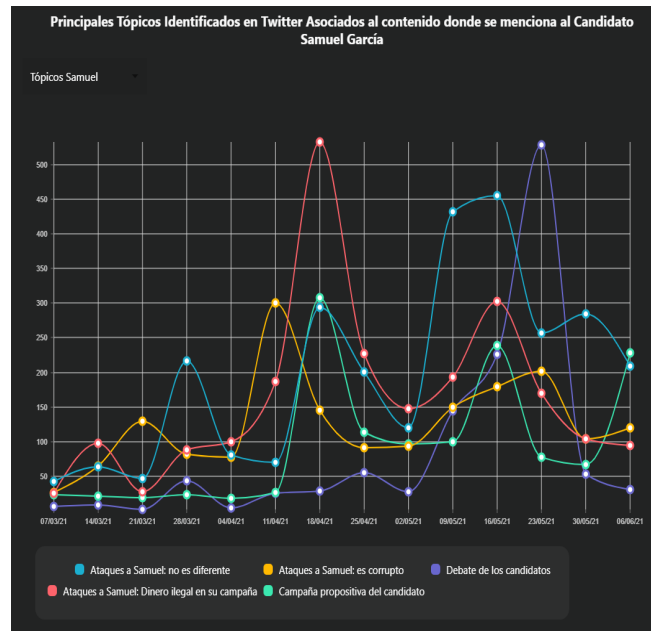
Figure 43*. Evolution over time of the number of tweets associated with each topic of Samuel García's campaign. Source: Authors' own work. The interactive graph can be viewed at https://www.mexicovid19.app/sentiment-analysis.*

The number of attacks against Samuel García and the number of topics recognized by the algorithm is noteworthy. Three of the most important topics were attacks on the candidate. The graph shows the peaks that correspond to relevant events during his campaign, such as when he was linked to a relative involved in drug trafficking and accused of using illegal money in his campaign. It is necessary to emphasize that positive tweets associated with his campaign have peaks coinciding with the peaks of the attacks against him. In other words, the candidate's highest frequency of positive tweets occurred in the same weeks that the attacks intensified.

This may be indicative of an effort by the candidate and related accounts to counteract the negative content that was expressed or disseminated against him during his campaign. The candidates' debate was an identifiable topic and dominated the final part of the campaign; in particular, the topic of attendance/non-attendance to the debate organized by the newspaper El Norte was prominent.

What do we learn from topic modeling to identify polarization on Twitter? When comparing the patterns of the different candidates, we can identify something atypical in the case of Clara Luz: the topics associated with her campaign are related to positive content and policy proposals. The algorithm does not manage to capture the attacks against her as topics with a sufficient level of coherence. The most plausible explanation for this interesting phenomenon is that the tweets that linked her to NXIVM do not have sufficient consistency to be grouped under the same topic. They lack coherence because they were an organic and spontaneous response via diverse content.

It is necessary to analyze this first finding in more detail (which will be explored in the upcoming months). However, in the case of Samuel and Adrian, the most important events that marked their campaigns can be observed in the topics identified. Samuel García was

the most attacked candidate of all, and had identifiable topics. The next part of this analysis is the examination of sentiments associated with each tweet based on the keywords.

Sentiment Analysis

As mentioned above, the "compound" is a metric that sums the positive, negative, and neutral scores for each text so that the metric is normalized on a scale of -1 to 1. Positive values are associated with positive sentiments associated with each candidate and negative values with negative sentiments. **Figure 44** represents the compound metric for the four candidates by date. The data in this graph was processed as follows. The sentiment analysis framework developed by the TEC de Monterrey team was used and applied to each of the tweets in the random sample.

Subsequently, the weighted average of the compound dimension of tweets per week and per candidate (according to their download keyword) was used. Weighting consists of the number of retweets—that is, the weight of the compound dimension of a tweet with more retweets is greater than that of a tweet with no retweets. The objective of the weighting is to give greater weight in the graphical representation to the content that had greater dissemination in the network. Due to lack of space, we focus on describing the compound that functions as a summary of other sentiment dimensions.
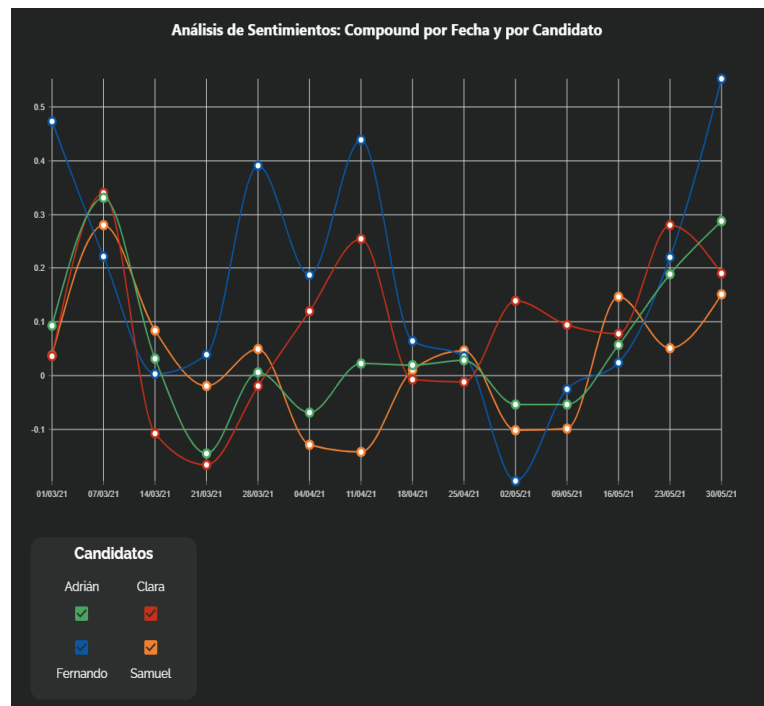
Figure 44. *Sentiment analysis of the "compound" metric by date and by candidate. Source: Authors' own elaboration. The interactive graph can be viewed at* [*https://www.mexicovid19.app/sentiment-analysis*](https://www.mexicovid19.app/sentiment-analysis)*.*

The candidate with the most positive ratings was Fernando Larrazabal. Clara Luz also moved through the positive part of the graph during the campaign, with the exception of

the week of March 21. In the case of Clara Luz, the video scandal affected her rating; she fell to the most negative point of the scale. The Clara Luz videos did not emerge in the analysis of topics as a theme of its own, but an effect is registered in the sentiment analysis. Samuel and Adrián had the most movement on a scale close to zero. Samuel was the candidate with the highest amount of negative content. This is consistent with the topic analysis; Samuel had the highest number of identifiable topics against him. The fluctuations of the compound sentiment measure matched with the dates of major attacks against each candidate during the campaign.

In conclusion, the case of Nuevo León provides us with several insights on how the discussion on Twitter evolved during the electoral process. This social network is a microcosm that does not necessarily reflect reality: the candidate with the most positive ratings on Twitter came in third place in the election, and the one who had the most topics associated with its campaign proposals came in fourth place. When it comes to the two leading candidates, the topics and sentiments do reflect the most relevant developments of their campaigns. The polarization around election winner Samuel García is noteworthy due to the number of attacks he received, which is reflected in his identified topics and levels of negative sentiment.

Furthermore, the analysis illustrates that topic modeling and sentiment are useful for identifying the effects of polarization around a topic. The most complex part of this type of analysis is defining the scope of the study and selecting the key words for download. In the case study presented, we do not perceive a polarization effect around the topic of the election itself, nor around all the candidates; polarization is identified in the data of the two leading candidates, and in particular, the winner Samuel García.

RECOMMENDATIONS: WHAT TO DO WHEN FACING DISINFORMATION, FAKE NEWS AND POLITICAL PROPAGANDA ON SOCIAL NETWORKS

Based on the idea that disinformation affects society as a whole, erodes public institutions and the state, hinders transparency and accountability, and hinders democracy, recommendations should be presented within a framework that allows for the coordination of key actors and efforts to "tackle disinformation from different fronts." By key actors we mean: government, journalists and researchers, fact-checkers, online platforms, social networks, companies, and civil society.[104] Setting up a coordinated action plan could lead to significant improvements in relation to disinformation at both the national and regional levels.

Other important elements to consider when designing recommendations should be: (i) distinguishing between illegal content and content that is harmful, but not illegal. This distinction is fundamental to determine the response strategy to be implemented; (ii) to establish whether the harmful but legal content is intended to mislead, to cause harm,

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[104] This idea is based on the experience of the East StratCom Working Group, created in 2015 through the European External Action Service (EEAS) to combat disinformation campaigns coming from Russia.

and/or to gain any economic or other kind of benefit; and (iii) to define the areas, topics, persons, or institutions that are directly affected by the disinformation. These considerations will allow us to design calibrated responses directly related to "the seriousness of the damage, the intention, the form of propagation, the agents involved, and their origin."[105]

It is not easy to cover these bases, which is why the participation of key actors is necessary. While the lack of participation from key actors may not prevent the desired results from being achieved, it may complicate and slow down the process.

Facing an increase in disinformation and the spread of "fake news," key players have intensified discussions and analysis to develop strategies to limit the influence of disinformation on public opinion, while safeguarding the benefits of digital communication in the 21st century.

We identify three main areas within these recommendations:

1) Proposals focused on multiplying and strengthening information sources and investigative journalism, which in turn can be complemented with educational campaigns that enable citizens to discern between sources with verified information and those associated with disinformation.

2) Proposals that emphasize the need to strengthen government regulations to monitor the spread of fake news, and even go so far as to hold major social networks such as Twitter, Facebook, YouTube, Instagram, and TikTok accountable for the mass dissemination of fake content.

3) Proposals that rely on the ability of the major social networks to regulate themselves to prevent the spread of fake news and disinformation, but that in turn avoid the dangers of government censorship that can jeopardize freedom of expression under the guise of regulation that supposedly seeks to protect citizens against this problem.

Different initiatives around the world have begun to work on each of these approaches, having experienced mixed results in terms of their effectiveness in curbing disinformation on social networks.

1) Proposals focused on educating social network users, promoting the understanding of diverse information sources and the challenges of political psychology.

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[105] "Misinformation can be countered through accurate refutation, myth-busting and media literacy initiatives; disinformation, on the other hand, needs to be countered with other tools, including the adoption of measures by public administrations such as those set out in the Action Plan against Disinformation," in Joint Communication to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the European Committee of the Regions. Communication on the EU global response to COVID-19. https://op.europa.eu/es/publication-detail/-/publication/459ed2d1-7981-11ea-b75f-01aa75ed71a1.

In 2017, Darrell M. West of Brookings published a report entitled, "How to combat fake news and disinformation." [106] This report suggests that educational institutions prioritize teaching "news literacy," or the processing of news information consumed. Additionally, it is important to promote government funding aimed at strengthening partnerships between universities, the private sector, media, and civil society organizations in order to develop strategies for "news education."

Efforts to promote news literacy are particularly relevant for young people. In an experiment within the Youth Participatory Politics Survey, it was found that youth who were exposed to media education were significantly more capable of accurately rating evidence-based posts and distinguishing them from fake news, regardless of whether the content was consistent with their ideological predispositions. That is, those youth who learned the importance of evaluating the evidence supporting an opinion gathered in a news story and developing exercises to strengthen skills to assess the accuracy of information they found online were able to more accurately distinguish fake news or disinformation.[107]

Investigative journalism is a key strategy for gaining public trust and addressing fake news and disinformation without legitimizing the sources that propagate such information. Furthermore, the collaboration between professional journalism organizations, civil society organizations and social networks is key to strengthening efforts related to news verification. Initiatives that seek to contribute to this strategy include Politifact[108], Factheck.org, and Snopes, which assess and report on the veracity of statements made by political leaders.

2) Government proposals and attempts to regulate social networks as a strategy to limit the spread of fake news and disinformation.

Among the efforts of government agencies trying to monitor and limit fake news and disinformation, there are two strategies that have been implemented in different countries: (i) establishing clear definitions of "hate speech" and "disinformation in legislation or judicial criteria; and (ii) developing legislation that requires digital platforms to remove all content that falls under the description of "hate speech," and some countries suggest even content under the description of "disinformation" should be included.

These proposals generate certain risks to human rights; for example, the fact that "hate speech" or "disinformation" are not well defined may lead ruling governments to establish

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[106] West, D. M. (2017, December 18). How to combat fake news and disinformation. Brookings Reports. https://www.brookings.edu/research/how-to-combat-fake-news-and-disinformation/

[107] Kahne, J., & Bowyer, B. (2017). Educating for Democracy in a Partisan Age: Confronting the Challenges of Motivated Reasoning and Misinformation. American Educational Research Journal, 54(1). https://doi.org/10.3102/0002831216679817

[108] PolitiFact is a platform created by William Yang Wang, that contains a database with 12,836 public statements of various public officials to which a linguistic pattern matching algorithm was applied, allowing to identify stories based on false information.

their own definition that plays to its ability to sanction, censor, and even eliminate journalists and media that oppose the government.

Unilateral government censorship of disinformation could have the adverse effect of criminalizing investigative journalism and limiting freedom of expression. In this regard, several human rights defenders and press freedom activists warn of the danger that such measures can be abused and used by authoritarian governments to censor their critics and deter their political opponents. One example of regulation aimed at reducing disinformation with seemingly positive effects is the Rapid Alert System (RAS). RAS is a technological platform that was created in 2019 and is managed by the European Commission and the European External Action Service. EU member states feed RAS with information through designated contacts in the various government communication departments, EU institutions such as NATO or the G7, and other actors such as universities, technology companies, and specialized civil society organizations.

Through RAS, a permanent monitoring of content published in media and social networks is conducted by a platform that facilitates data exchange and division of labor among analysts, allowing real-time alerts to be issued when disinformation campaigns are detected. RAS operates based on the EU's requirement for electronic platforms to apply the self-regulatory Code of Best Practices against disinformation enacted by the European Commission in 2018. The Code is non-binding; however, as a result of the work and coordination of RAS, several platforms have decided to apply the Code to increase levels of accuracy and viewership.

The creation of these types of platforms is recommended so long as they are developed in collaboration with other actors, in which government participation plays a key role. The absence of government could cause delay and irrelevant outcomes. In other words, an immediate response to disinformation can only be achieved if the chain of research, data collection, systematization, and analysis is completed with the input of a diverse group of actors sharing their assets.

Despite the importance of partnerships in implementing fact-checking efforts, it is necessary to consider their limitations. The spread of disinformation can be far more extensive than the capacity of the fact-checkers and can make the assessment of disinformation virtually impossible. Moreover, political psychology research suggests that individuals are unlikely to change their minds when presented with alternative information, even if the content is verified and true. Ideological predispositions lead either to the discarding of additional information not consistent with their beliefs or even to accommodate them in such a way that may be compatible.[109]

Solutions that suggest exposing the public to information sources contrary to their belief system as a moderation mechanism to mitigate social polarization and decrease the likelihood of fake news consumption are not very promising. Recently, Chris Bail of Duke University found that the response of individuals with strong partisan identities ended up

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[109] Bail, 2021

becoming more radicalized when presented with media articles contrary to their partisan preferences.

However, there is also evidence that, rather than presenting news to make it consistent with ideological predispositions, the people who end up consuming fake news are those who fail in their analytical thinking. Therefore, policies should be designed to strengthen the public's analytical skills and reflection.

Among the efforts to strengthen the self-regulation of networks, the case of Facebook is worth mentioning. Facebook has designed a system to establish a label that warns when a news item appearing on its platform is in dispute. In 2016, this tool that facilitates the flagging of a news item as possibly false allows for content received a sufficient number of flags to be directed to a coalition of fact-checking groups. Collaborators of this fact-checking coalition include Snopes, PolitiFact, The Associated Press, FactCheck.org, and ABC News.[110] This has had positive effects, as it has resulted in a 10 percent drop in readers of articles "in dispute".[111]

According to Facebook, through cooperation with more than 80 fact-checking and content verification organizations, it has been able to remove more than 12 million articles with false information related to COVID-19.[112]

3) Self-regulation of social networks as a mechanism to curb disinformation and fake news.

As part of a U.S. congressional hearing, the CEOs of three major social media conglomerates (Facebook, YouTube, and Twitter) presented their self-regulatory efforts to combat fake news and misinformation.

Sundar Pichai of YouTube pointed out that during 2020, YouTube made an effort to identify and remove misleading content for voters. In this regard, the U.S. Congress has been discussing the possibility of removing Section 230, the legislation that was passed at the beginning of the creation of the internet, that allows website owners to moderate their content without worrying about being subject to legal liability like print media. However, Pichai insisted at the congressional hearing that such a decision could have unintended consequences, as it could harm both freedom of expression and the ability of platforms to take responsible actions to protect their users in the wake of constantly evolving challenges.[113]

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[110] Isaac, M. *Facebook mounts effort to limit tide of fake news*. The New York Times. Retrieved 28, 2021, from https://www.nytimes.com/2016/12/15/technology/facebook-fake-news.html

[111] Nyhan, B. (2017, October 23). Why the Fact-Checking at Facebook Needs to Be Checked. The New York Times. https://www.nytimes.com/2017/10/23/upshot/why-the-fact-checking-at-facebook-needs-to-be-checked.html

[112] Wakefield, J. (2021, March 25). Google, Facebook Twitter grilled in U.S.on fake news. BBC News. https://www.bbc.com/news/technology-56523378

[113] PBS NewsHour. (2021, March 25). Tech heads testify on misinformation in the aftermath of Jan. 6 riots. YouTube. https://www.youtube.com/watch?v=RGPIWPAMZFw

Two policies stand out that were created to limit the concentration and dissemination of disinformation and fake news on Twitter:

a) **Birdwatch**. In the case of Birdwatch, Twitter recently announced a collaboration with the Associated Press and Reuters to expand efforts to identify fake news and raise the credibility of information disseminated through Twitter. Initially, these two news agencies will focus their efforts on English-language sources. Twitter affirmed that it is "committed to ensuring that when people turn to Twitter to see what's happening, they can easily find reliable information. Twitter will be able to expand the scale and increase the speed of our efforts to provide a timely and reliable context on the wide range of global topics and conversations happening on Twitter every day."[114]

This strategy of identifying disinformation and fake news relies on individual feedback from a group of 2,000 Twitter users and is a more decentralized measure, which according to managers at Twitter, allows for faster response to the spread of misleading information. Participants can add context, which could lead people to trust and consider the most valuable content.

Birdwatch is initially focusing on the U.S. but will eventually become a tool for the global Twitter audience.[115] This effort contrasts with Facebook's policies that have relied more on its partnerships with independent news content fact-checking organizations.

b) **Bluesky** is a web decentralization protocol that was announced in 2019. Little is known about Bluesky; at the beginning it was thought that it would allow access and contribution to a much larger space for public conversation, so that it could open up the possibility to develop algorithms that promote healthy conversation and allow Twitter to be even more innovative. According to Twitter CEO Jack Dorsey, the mission of this effort is to "either find an existing decentralized standard they can help move forward, or failing that, create one from scratch."

Resistance to external monitoring: Facebook's questionable self-regulation.

Of the social networks, Facebook has been most questioned in its actions to limit the dissemination of false information through its platform. Although FB has mainly implemented a more centralized strategy by working with information verification organizations, there have been a series of actions that suggest reluctance to monitoring by disinterested third parties working to verify the effectiveness of its policies.

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[114] https://twitter.com/TwitterSafety/status/1422288755197726731.

[115] Keith Coleman, "Introducing Birdwatch, a community-based approach to misinformation," Twitter, January 25, 2021. Available at https://blog.twitter.com/en_us/topics/product/2021/introducing-birdwatch-a-community-based-approach-to-misinformation, and Lucas Matney, "Introducing Birdwatch, a community-based approach to misinformation," *Techcrunch*, June 2, 2021. Available at

https://techcrunch.com/2021/06/02/twitter-starts-rolling-out-birdwatch-fact-checks-inside-tweets/.

The most notable case occurred at the beginning of August, when the suspension of accounts of researchers from "The Cybersecurity for Democracy" project at New York University (NYU) was made public on the grounds that they violated the platform's privacy terms. This project began to expose major problems related to the transparency of political ad tools that appear to Facebook users. Preliminary findings suggest that this platform's algorithms amplify disinformation. These researchers also recently contributed to an initiative in partnership with the Virality Project, which tracks disinformation about vaccines and partisan campaigns.

According to NYU researchers, the decision to suspend their accounts happened after they reported that they were looking into the spread of disinformation about the coordination of the riots that occurred in Washington, D.C., on January 6. Laura Edelson wrote in a thread on her Twitter account:

"Over the last several years, we've used this access to uncover systemic flaws in the Facebook Ad Library, identify misinformation in political ads including many showing distrust in our election system, and to study Facebook's apparent amplification of partisan misinformation. By suspending our accounts, Facebook has effectively ended all this work. Facebook has also effectively cut off access to more than two dozen other researchers and journalists who get access to Facebook data through our project. The work our team does to make data about disinformation on Facebook transparent is vital to a healthy internet and a healthy democracy."[116]

Facebook used the argument of the U.S. Federal Trade Commission's order to protect the private information of its users as the reason for the suspension.[117] However, both legislators and internet experts have pointed out that this reasoning is a pretext and has no legal basis. The information collected through the NYU project is shared voluntarily by users who downloaded the Ad Observer, including the information that appears in the "Why am I seeing this ad?" widget. Based on this data, the researchers could infer which political ads are being targeted at specific user groups (information that Facebook does not currently make public).

For critics, Facebook is again showing reluctance to account for its actions resulting in the control of political disinformation on its platform.[118] Even Mozilla decided to recommend its users download Ad Observer, after verifying with NYU researchers that the privacy of the participants' information was not violated.[119]

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[116] The full thread is available at: @LauraEdelson2 (August 3, 2021), https://twitter.com/LauraEdelson2/status/1422736707485634563?ref_src=twsrc%5Etfw%7Ctwcamp%5Etweetembed%7Ctwterm%5E1422736707485634563%7Ctwgr%5E%7Ctwcon%5Es1_&ref_url=https%3A%2F%2F.

[117] When the Cambridge Analytica scandal broke, some researchers were able to access information from Facebook users, including data from their friends. This information was shared with Cambridge Analytica, a company that used Facebook to disseminate political messages specifically targeted at user groups.

[118] Gilad Edelman, "Facebook's Reason for Banning Researchers Doesn't Hold Up," *Wired,* August 4, 2021, https://www.wired.com/story/facebooks-reason-banning-researchers-doesnt-hold-up/.

[119] Marshall Erwin, "Why Facebook's claims about the Ad Observer are wrong," *Mozilla*, August 4, 2021, https://blog.mozilla.org/en/mozilla/news/why-facebooks-claims-about-the-ad-observer-are-wrong/.

In the wake of Facebook's resistance, there has been growing pressure for internet regulators to force platforms to make their ad information public. For example, Mozilla wrote a letter to the European Commission to demand that, under the Code of Practice on Disinformation, it make ad information public to their users. Mozilla executives argued:

"Transparency cannot just be on the terms with which the world's largest, most powerful tech companies are most comfortable. To have true transparency in this space, the Ad Archive API needs to be publicly available to everyone. That is what is needed to fulfill the spirit of commitments in the Code 5 of Practice. Moreover, to be relevant to the upcoming EU Parliamentary elections, that API must be available soon, with enough lead time to allow developers to innovate and build transparency tools with the data the API provides. Public availability of this API is all the more pressing now that other public transparency tools that were previously available have stopped working. We urge Facebook to develop an open, functional API that can be used by any developer, researcher, or organisation to develop tools, critical insights, and research designed to educate and empower users to understand and therefore resist targeted disinformation campaigns."

The incident involving Facebook and the NYU researchers has a similar precedent that illustrates that Facebook's review by third-party actors is unacceptable. Two years ago, ProPublica reported that along with [Mozilla](#) and [Who Targets Me](#), it had been blocked by Facebook when it sought to collect information to reveal how the platform targeted political ads. Facebook then argued that it had implemented a routine update to stop ad blocking and ad scraping plugins.

The Guardian also reported on how Facebook had restricted WhoTargetsMe, a British group dedicated to examining ads on social networks. Facebook blocked the possibility of external monitoring of the transparency of ads disseminated through its platform.[120] These efforts are relevant, particularly in light of investigations that point to Facebook being used strategically by the United Kingdom Conservative party in the dissemination of political messages during the 2017 referendum.

There has been recent emphasis on how Facebook has consistently failed to curb hate speech, misinformation, and violent rhetoric on its platform. Facebook has managed to leverage the enormous economic value of its data mining operations, through which it collects the "likes" and "dislikes" data of its users, which it sells to those seeking to

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[120] James Waterson, "Facebook restricts campaigners' ability to check ads for political transparency," The Guardian, January 27, 2019. https://www.theguardian.com/technology/2019/jan/27/facebook-restricts-campaigners-ability-to-check-ads-for-political-transparency

advertise on its platform .[121] It should be remembered that Facebook currently has 2.8 billion monthly active users (the world's population is 7.8 billion).[122]

Among the recurrent recommendations to the platforms is the recommendation to publicize monthly reports on their policies and actions to address disinformation, including initiatives to promote content authorized by national authorities, data on the measures taken to promote information from national and international bodies, and the transparency objectives of these initiatives. It is also recommended that platforms publicize the data on policies regarding user interaction with disinformation. Another recommendation is that they publicize reports of proven cases of disinformation on its platform, as well as the deletion of user accounts. It is recommended that they disclose policies aimed at limiting advertising containing disinformation on third-party websites in order to attract advertising revenue and data.

The Mexican context and the challenges of implementing tools to limit disinformation

It is important to consider that in Mexico there are multiple concerns about the effectiveness of the policies that can be implemented to curb disinformation, and above all, the increasing political use of social networks in a context of growing social polarization. In this environment, the behavior of President López Obrador, who constantly spreads lies through his press conferences and attacks the media, further complicates the possibility of outlining effective policies to limit the dissemination of political information on social networks that can contribute to the erosion of Mexico's fragile and young democracy.

For example, President López Obrador's government report presented on September 1 was promoted through a series of 13 media spots in which he stated various achievements of his government and uses questionable or outright false information. Animal Político and its team called El Sabueso analyzed these spots. In one of these spots, the president claims that "60 percent of the population has already been vaccinated." El Sabueso @ElSabuesoAP strongly states: "False. According to data from the Ministry of Health, as of August 27, 57 million people have had access to a vaccine, but only 32.8 million have had access to the complete vaccination dosage, which is 36 percent of the total adult population."[123]

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[121] Frenkel S., and Kan C., *An Ugly Truth: Inside Facebook's Battle for Domination,* (New York: Harper, 2021). See also this related interview on PBS Newshour, "Is Facebook putting company over country? New book explores its role in misinformation," YouTube, July 22, 2021. Available at: https://www.youtube.com/watch?v=37PdvmBcaSI.

[122] John Naughton, "An Ugly Truth by Sheera Frenkel and Cecilia Kang review – Facebook's battle for domination," The Guardian, July 18, 2021. https://www.theguardian.com/books/2021/jul/18/an-ugly-truth-inside-facebook-battle-for-domination-sheera-frenkel-cecilia-kang-review.

[123] Animal Político (@Pajaropolitico), ".@lopezobrador_ dará hoy su tercer informe de gobierno y para promocionarlo se difundieron 13 spots publicitarios," *Twitter, September 1, 2021. https://twitter.com/Pajaropolitico/status/1433069113627267074.*

Furthermore, a political communications consulting firm, Spin Político, has tracked the president's statements given during his daily press conferences. Throughout 1,005 days in office, he has held 684 press conferences lasting an average of 108 minutes. In this period, the president has made 61,079 untrue statements (89 on average per press conference) (El Universal, September 1, 2021). This is twice as many false statements as Trump made during his administration, according to the Washington Post, which documented 30,573 false statements per press conference (an average of 21 wrong statements per day).[124] Consistent with the President's repeated attacks on national and international media, on June 30 he announced in his press conference a new segment called "*Who's who in this week's lies.*" According to the President, this is "the segment of these conferences destined to reveal the lies that are disseminated in the conventional media and on social networks, so that there is more and more information on this and so that we have a citizenry that is very aware and not susceptible to manipulation, and so that the truth always prevails, no lying... that there be ethical journalism in journalism, in the noble profession of journalism, that it be an ethical imperative and that we assume the responsibility of respecting the people, that we cannot lie with impunity."[125]

Each time this segment begins, it starts off with the president promising that that it will not stigmatize journalists or the media. However, El Sabueso has identified at least 25 occasions in which the president and the spokesperson of this segment have used adjectives such as "hypocrites, sensationalists, biased, sell-outs, corrupt, mercantilists, liars" to refer to the press. López Obrador has discredited the national and international press under the argument that its journalists are conservatives, that they benefited from the neoliberal governments and that they are in an open campaign against his administration.

While preparing this report, an incident occurred that illustrates the challenges of establishing policies to control disinformation and the dissemination of messages that increase polarization in Mexican society, especially when the source of this disinformation is the highest authority of the country itself: the presidency.

On Thursday, September 2, one day after the president's annual government report, during the segment of "Who's Who," journalists Leonardo Kourchenko and Carlos Loret were described as sensationalists and biased; Kourchenko for his article published by the newspaper El Financiero and Carlos Loret for his opinions on his radio program, via which they both questioned the reasoning that led to the prosecution of former PAN presidential candidate Ricardo Anaya, who is accused of having received bribes to vote in favor of the energy reform during the previous administration. This is ironic when

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[124] "Trump's false or misleading claims-total 30573 over four years," *Washington Post,* January 24, 2021. https://www.washingtonpost.com/politics/2021/01/24/trumps-false-or-misleading-claims-total-30573-over-four-years/.

[125] Pedro Villa y Caña and Alberto Morales, "AMLO presenta informe "Quién es quién en las mentiras de la semana"," *El Universal,* June 30, 2021. https://www.eluniversal.com.mx/nacion/amlo-presenta-informe-quien-es-quien-en-las-mentiras-de-la-semana.

compared to the investigation of the President's brothers, who were taped receiving large sums of money that was allegedly used for MORENA political campaigns.[126]

The "Who's Who" spokesperson pointed out that, regarding both Kourchenko's article and Loret's opinions, "rather than seeing a case of selective justice [referring to the government of President López Obrador] we see a case of biased and tabloid journalism aimed at bashing the government."

In the same press conference, the "Who's Who" spokesperson referred to a tweet disseminated from an account that impersonated that of the national newspaper Excelsior, and reported an explosion of three gas tanks of the new Mexican national gas company, Gas Bienestar. The spokeswoman even took the time to show a video that had been attached to the tweet showing an explosion that was apparently in the Middle East. Once the tweet, photos and video were shown, the spokeswoman stated that this fake news was distributed in a coordinated manner by a series of verified accounts that shared the same email address linked to the firm "Tridente," a communications consulting firm composed of journalists. She called attention to Gabriela Warkentin, Sandra Romandia, Alejandro Rosas, and other journalists who had replicated the fake news, whose content "is a clear example of a dirty war to discredit the efforts of the Mexican government to support the household economy by providing gas at fair prices to low-income families." The spokesperson accused the aforementioned journalists of being part of a network of conspirators trying to overthrow the López Obrador government.

The networks of followers, trolls, and bots in favor of President López Obrador then began to harass, insult, discredit, and threaten the aforementioned journalists. Two of those discredited in the press conference wrote articles rejecting the presidential accusation and condemned the public lynching as a consequence of the spokesperson's statement. In their editorials, they emphasized how no one, not even federal officials, sought to ask them if they had allegedly spread fake news on their Twitter networks.[127] In Warketin's words, "Did they ever call me to ask if it was true? To check sources? No, they just accused. Because in the intimidation that is Who's Who in [this week's] lies, revenge prevails, not methodology."

The fact-checking conducted by media such as Animal Político with El Sabuseo and supported by different civil society organizations began during the previous administration of Enrique Peña Nieto. It cannot be dismissed by the current government

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[126] The articles question the double standard by the authorities of the Attorney General's Office in the investigations of alleged corruption crimes, since the case against Anaya is based solely on the accusation of the former director of Pemex Emilio Lozoya, without any evidence to support the allegations. Meanwhile, there has been no progress made on the investigations against the brothers of President López Obrador, who were videotaped receiving money in cash that allegedly ended up going towards MORENA political campaigns. The President has said that the videos of his brothers are part of a plot and that it was only a personal agreement between his brothers and the person who gave him the money, a politician from Chiapas linked to the state government at the time and later a close collaborator of President López Obrado.

[127] See Gabriela Warkentin de la Mora, "Dejemos de reventar la conversación pública," *El País*, September 5, 2021. Available at: https://www.eluniversal.com.mx/opinion/sandra-romandia/la-intachable-metodologia-del-quien-es-quien-de-amlo and https://elpais.com/mexico/2021-09-05/dejemos-de-reventar-la-conversacion-publica.html.

as an attack towards its current administration. In addition, this fact-checking has its limitations in contexts of polarization because the number of false claims from the government has multiplied exponentially, and it is difficult to broaden the fact-checking capacity to a scale similar to that of the U.S. or Europe.

The idea of implementing regulatory mechanisms may increase the polarization observed on social networks even more and could echo the warnings of attacks on freedom of expression disguised as means to protect public opinion and prevent the spread of disinformation. Moreover, the self-regulation of social networks, in light of the aforementioned controversies in the U.S., is also questionable because it does not seem to be yielding results that successfully curtail the spread of false news.

It is necessary to promote multidisciplinary efforts that deepen the classification of information disseminated in social networks, in order to clearly identify patterns of political use of networks and mechanisms that republish propaganda to disseminate favorable news or criticisms of authorities. These messages, along with fake news and misinformation, are contributing to the further polarization of public discussion on social networks such as Twitter. Understanding the impact of this phenomenon on public opinion is a fundamental area of research that should be prioritized as part of a strategy to curb the spread of fake news and lessen the polarization on social networks.

CONCLUSIONS AND NEXT STEPS

Although this report did not find evidence of influence from foreign countries, the ubiquity of social networks allows for the possibility of interference by foreign governments in issues of national importance. This is particularly worrisome in a context of growing polarization such as that observed in Mexico, which could be leveraged by foreign actors to contribute even more to such polarization through the dissemination of content in favor or against important political actors. The intentionality of this type of campaign is decisive in contributing, for example, to the destabilization of a country, influencing its voters or polarizing societies around the world.

Although 130 tweets associated with misinformation-disinformation were detected in a sample of 3,000 tweets analyzed in order to understand the conversation around COVID-19 in Mexico, there was no robust evidence that these tweets came from the most influential accounts within the sample analyzed. or that they were systematically disseminated. However, there is evidence of polarization on Twitter concerning the government's handling of the pandemic. There are two identifiable factions: accounts that promote messages in favor of the federal government, and accounts that disseminate criticism of the federal authorities' actions in this matter.

The visualization of the networks detected in a larger sample (20,036 tweets) allows us to identify two large groups of interactions: one revolving around President López Obrador and another associated with the case of the governor of the state of Mexico, Alfredo del Mazo. The latter is consistent with previous analyses that identified a similar pattern of accounts operating around this political figure on Twitter.

Initial research findings confirm that it is necessary to establish a clear, multi-sector commitment to preserve social networks as a space for public conversation rather than for polarization and disinformation. This paper portrays the need to integrate collective and interdisciplinary efforts to better understand the intricate dynamics of social networks, especially when it comes to relevant national events, such as the examples depicted in the report including: COVID-19; the case of the Sputnik V vaccine; and the dynamics observed in the sentiments spread on Twitter during the elections in Nuevo León.

In Mexico, the resources that exist to monitor social networks are currently insufficient. Neutral, scientific, and computational research and analysis of the public conversation on Twitter with a long-term vision is limited. The availability of financial resources and human capital is vital to generate information that allows for constructive, cross-sector dialogue to create better public policies and transparency for citizens.

In addition, due to the lack of borders in the digital world, large-scale campaigns to disseminate achievements or create polarization (intentions and emotions) require a local, national, and regional approach. The regional effort carried out through this project is an example of a way forward. While collaborative efforts present significant challenges, it is important to continue this work to better manage the knowledge and tools to detect:

- Possible malicious influence from an outside country;

- The dissemination of fake news;

- Artificial campaigns to promote the accomplishments of a government or to attack the opposition; and

- The spread of a polarizing discourse that results in radicalization and possible violence.

Today we have more questions than answers: What exactly is the modus operandi of campaigns using generic accounts for or against a government? Who coordinates them? How much does it cost to create a fake account? Should the number of artificial accounts be reported by parties or governments to the National Electoral Institute (INE)? And perhaps the most important question is: what is the future of targeted campaigns and the growing polarization in the context of contemporary democracies or in the international geopolitical landscape?

What do we do if we see an escalation of polarization in Mexico that presages a violent outcome? How do we make Twitter and other social networks a free space for the expression of ideas and the construction of a participatory democracy based on evidence, facts, tolerance, and respect? What will be the future of the obligations and responsibility of digital platforms such as Twitter in the fight against disinformation, polarization, and artificial campaigns? These and other questions need to be addressed from a public policy standpoint to strengthen democracies and guarantee freedom of expression.

Among the many challenges to be faced in the near future is the consolidation of content verification algorithms. This, together with specialized and multidisciplinary groups such as those already operating in Mexico, can independently and capably delve deeper into

dissemination mechanisms that are contributing to growing polarization, disinformation and fake news to respond to political and/or economic interests.

Chris Ball warns that, in an environment of polarization, both factions have taken the reins of discussion in social networks, which minimizes the voices of users who do not identify with either faction (those who consider that in a heterogeneous society there is room for a broad spectrum of thought, and not everything that exists is "black" or "white"). Neutrality, as well as critical and objective thinking, are weakened in societies with a high level of polarization. Understanding the dynamics on social networks that are leading to results of this nature is fundamental to limiting the social tension that can severely damage democracy.

It is necessary to multiply and consolidate efforts aimed at developing permanent social network observatories with the technological resources and the capabilities of specialized human capital, as well as basing these observatories on empirical evidence to offer practical workshops, seminars, and consultancies that share tools for the analysis of social networks. These observatories can also raise awareness of the dangers of disinformation and polarization, and the negative impact of public conversation on democratic society. In this way, monitoring the veracity of social networks becomes a multi-sectoral and collective endeavor that can be strengthened by these social network observatories. The creation of this type of institution can contribute to the documentation and analysis of the empirical behavior of users, allowing for a better understanding of the long-term effects of polarization in relatively young democracies such as Mexico.

As with all new technologies, it will take time to understand the effect that social networks have on our society. From a historical perspective, it is important not to be alarmist or complacent when atypical phenomena in social networks arise, and it is necessary to promote dialogue and knowledge to be better informed and act accordingly in the face of scenarios involving disinformation and polarization. Most of the fear that comes from social networks is related to the invisible or incomprehensible. As part of the contributions of this report, we have shown the importance of visualizing the networks that operate in the dissemination of posts on Twitter.

In effort to understand the dynamics of the dissemination of messages on Twitter about the handling of the COVID-19 pandemic in Mexico, our research confirms the need to promote a long-term approach to continuing education and digital literacy efforts, as well as strengthen the collaboration between academics, independent fact-checkers, journalists, and civil society organizations in order to deepen the understanding of this phenomenon. Greater collaboration will also support measures that limit disinformation and polarization that comes along with it.

Appendices A, B, and C can be accessed at: https://theglobalamericans.org/disinformation-appendices/.

Universidad del Rosario – Colombia

Colombia has been the target of disinformation by both China and Russia. The Chinese government's strategy is based on the use of sharp power (defined below), which portrays the Asian country in a positive light and as a great open opportunity for partnerships in commerce, investment, and diplomacy, while posing its development model as one worthy of emulation. In terms of COVID-19, the Chinese government seeks to downplay its role in the pandemic as a point of origin and play up its position as a helpful and benevolent partner through donations of medical resources and vaccines, while casting Western vaccines and efforts in a negative light. In contrast, Russia's approach is more direct and focused on inflaming social unrest, attempting to debilitate Colombia for its role as an ally to the United States and key player in the region.

INTRODUCTION AND THEORETICAL FRAMEWORK

Concern over disinformation has become a high-profile phenomenon. In several fields, communication strategies are now more sophisticated, as is the development and spread of disinformation. As noted by Alice Marwick and Rebecca Lewis, "Taking advantage of the opportunity the internet presents for collaboration, communication, and peer production, these groups [that generate disinformation] target vulnerabilities in the news media ecosystem to increase the visibility of and audience for their messages."[128] Disinformation dynamics have been more complex to the point of blurring the line between false and verifiable information and involve different types of actors in the spread and amplification of messages.

Building on the point above, Claire Wardle and Hossein Derakhshan classify types of messages that do not qualify as true.[129] The authors describe three major categories: misinformation, referring to the transmission of false information that is not intended to cause harm; disinformation, describing false information that is intended to cause harm; and misuse of information, referring to the use of true information intended to cause harm.

Additionally, Wardle and Derakhshan (2017) highlight a necessary process in what they call information disorder.[130] The first stage of this process is the creation of the message, which, as previously mentioned, may have the intention of causing harm or not, and may even be true. The second stage is the replication of the message, which consists of converting it into an information product for transmission by the media. Finally, the message is disseminated and becomes public. These stages described can be carried out by different actors, but it is also possible that an actor is responsible for more than one of these stages. One last characteristic of this process is the questioning of how these

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[128] Marwick, A., and Lewis, R. (2017). "Media Manipulation and Disinformation Online," Data & Society, 3.

[129] Wardle, C., & Derakhshan, H. (2017). Information Disorder. Toward an interdisciplinary framework for research and policymaking. Strasbourg: Council of Europe, 5-6.

[130] Ibid.

messages are received. In other words, is the message received the same as the original or is it modified throughout the transmission process?

The term sharp power intends to encompass this new phenomenon that is often employed by authoritarian countries aiming to attract, distract, and manipulate audiences in democratic countries through its communications outlets, cultural centers, and global language learning.[131] Sharp power does not merely create a positive image at the international level, it also has influence at the national level and can create political division and manipulate audiences by creating controversy within society or with other countries. Such interference is known as information operations, which consist of the creation of disinformation campaigns that are presumably orchestrated by media affiliated to these countries and that lack full transparency.

Many online disinformation efforts coming from states and other non-state actors have been characterized by "coordinated, non-authentic behavior" (CIB), which can encompass different stages of the disinformation process (creation, production, and dissemination). This may refer to websites, social network accounts (Facebook, Twitter, Instagram, among others) of humans or bots that work together to try to influence or manipulate online conversations by publishing or strategically reproducing premeditated messages at specific times.[132]

Although websites and social networks are part of the internet, they function differently. Therefore, to identify **CIB**, it is necessary to focus attention on certain elements depending on the nature of each platform. On Twitter, inauthentic behavior is seen through user interaction with available content. This is known as traffic manipulation ("MDT," using its Spanish-language acronym) which is defined as an attempt by a group of users to generate a large flow of traffic to particular content on the platform with a disproportionately large number of posts. In other words, this phenomenon revolves around disproportionality, which is characterized by a level of activity that can be considered inauthentic in comparison to normal flows determined by Twitter.[133]

MDT is mostly generated by cyber troops—that is, government actors and political parties manipulating online public opinion by creating disinformation.[134] However, many cyber troops are also fueled by the participation of private sector and civil society actors, as well as internet subcultures such as youth groups, hackers, marginalized groups, influencers, and volunteers that support a cause or ideology.[135] The Project on Computational Propaganda at the University of Oxford has created a classification of cyber troops

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[131] Walker, C. (2018). What Is «Sharp Power»? *Journal of Democracy*, 29(3), 9-23. https://doi.org/10.1353/jod.2018.0041.

[132] Howard and Bradshaw (2019); North, S. (Sept. 19, 2020). *Three Easy Ways to Spot Coordinated Inauthentic Behavior Online*. North Cyber Research. https://samanthanorth.com/three-easy-ways-to-spot-coordinated-inauthentic-behavior-online/.

[133] Nimmo, B. & Atlantic Council. (2019). Measuring Traffic Manipulation on Twitter. *Computational propaganda research project*. https://demtech.oii.ox.ac.uk/research/posts/measuring-traffic-manipulation-on-twitter/.

[134] Bradshaw, S., & Howard, P. N. (Dec. 2017). Troops, Trolls and Troublemakers: A Global Inventory of Organized Social Media Manipulation. Oxford University Press.

[135] Howard and Bradshaw (2019).

according to their composition: government bodies, political leaders and parties, private contractors, citizens, and influencers.[136] The project considers the lack of authenticity of users who are in charge of disseminating disinformation in public debate as an essential MDT strategy. North (2020) states that this strategy is carried out by false accounts run by bots, humans, or cyborgs, in order to manipulate normal traffic levels on social networks.[137]

Bots can be defined as highly automated accounts designed to mimic human behavior online.[138] Their objective is often to position hashtags on "Trending" lists, or to silence or intimidate users. In moments of political agitation, they can be used to flood online discussions with unrelated content. Some influencer bots seem to operate individually, achieving impact by publishing very high volumes of content daily.

Cyborgs, in comparison to bots, operate at a lower grade of automation by publishing comments and frequent replies, making their behavior seem less like that of a machine and more human. These automated accounts behave similarly to bots that publish large volumes of information, often 100 to 250 times a day, and with a high proportion of retweets, typically ranging from 75 percent to 90 percent of the total amount of tweets.[139]

False accounts managed by humans/organics do not use automation and actively participate on social networks with a persona, making use of tools such as those on Twitter including comments, sending private messages, and reacting to comments from third parties. However, they operate under false identities. "Trolls" fall into this category and are characterized by accounts managed by a real user with a false identity, and that actively participate in provocative posts.[140]

The precise combination of humans, bots, and cyborgs used in each operation may vary. However, the majority of campaigns have the same objective: to generate high volumes of posts, creating a false impression of an organic, large-scale movement. To do this, users on Twitter exhibit the following behavior:

- Each account tweets a large number of posts approved by the platform (a maximum of 2,400 per day);

- Each account tweets a small number of posts and a large number of retweets; and

- A large number of bots or cyborgs retweet specific posts.

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[136] Ibid.

[137] North (2020).

[138] Ferrara, E. O. V. (July 1, 2016). *The Rise of Social Bots*. Communications of the ACM. https://cacm.acm.org/magazines/2016/7/204021-the-rise-of-social-bots/fulltext.

[139] Nimmo & Atlantic Council (2019).

[140] Jankowicz, N. (July 16, 2020) *How to Lose the Information War*. Australian Institute of International Affairs. https://bit.ly/3qaQSsq.

The Project on Computational Propaganda at the University of Oxford has created a classification of false accounts that are used by cyber troops around the world.[141]

- For **Chinese** cyber troops, the use of bots and accounts managed by humans are central to its dissemination strategy.

- **Russia** uses four types of accounts: bots, humans, cyborgs, and hacked accounts.

- **Cuban** cyber troops are limited to bots.

- **Venezuela** uses bots and accounts managed by humans.

Table 1. Type of false accounts

Country	Bots	Humans	Cyborgs	Hacked
China	■	■		
Russia	■	■	■	■
Cuba	■			
Venezuela	■	■		

Author's elaboration based on the report by Howard and Bradshaw (2019).[142]

Finally, the Project at the University of Oxford has also created a classification of cyber troops according to their composition: government bodies, political leaders and parties, private contractors, citizens, and influencers.[143] Taking this classification into consideration, this project reveals the following:

- Cyber troops as used by **Chinese** government agencies such as the Ministry of Public Safety, the National Office of Internet Information, the Ministry of Industry and Information Technology, and the communist party. Cyber troop activity has also been detected from civil society organizations and private contractors;[144]

- In **Russia,** cyber troops are used by government bodies such as the GRU and the Kremlin, as well as certain civil society organizations and private contractors;

- In **Cuba**, CIB is controlled by government agencies and civil society organizations; and

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[141] Howard and Bradshaw (2019).
[142] Howard and Bradshaw (2019), 12.
[143] Howard and Bradshaw (2019).
[144] Bradshaw and Howard (2017).

- Finally, actors leading the manipulation of online information in **Venezuela** include the Ministry of Communication, as well as private contractors and civil society organizations.[145]

Social Networking Analysis (SNA)

A social networking analysis was conducted to characterize users that reproduce information published by the media outlets included in this study, within the context of each country. An interdisciplinary methodology was used to, according to Linton Freeman (2004, p. 2),[146] focus on the relationships between individuals (or in the context of social sciences, social actors) instead of analyzing individuals as isolated cases.

In social science, the structural approach that is based on the study of interaction among social actors is called social network analysis. The relationships that social network analysts study are usually those that link individual human beings. But important social relationships may link social individuals that are not human, like ants or bees or deer or giraffes or apes. Or they may link actors that are not individuals at all. Network analysts often examine links among groups or organizations—even among nation-states or international alliances. The social network approach is grounded in the intuitive notion that the patterning of social ties in which actors are embedded has important consequences for those actors. Network analysts, then, seek to uncover various kinds of patterns. And they try to determine the conditions under which those patterns arise and to discover their consequences.

This methodology is applied in order to develop analyses based on the connections between actors and to identify individuals, teams and units that play a central role in the contexts under observation (Serrat, 2017).[147] There are programs that allow for the visualization of data pulled from various networks and the positioning of actors on each platform. Gephi is open-source software that is used as a tool to create visualizations of large social network datasets in order to discover and reveal trends among these connections between actors.[148] To understand these graphic representations, it is essential to take into account the terms below.

1. *Vertices* are the graphic representation of actors within the network. They are represented as circles or dots.

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[145] Howard and Bradshaw (2019).

[146] Linton Freeman (2004, p. 2).

[147] Serrat, 2017.

[148] Bastian, M., Heymann, S., Jacomy, M. (2009). *Gephi: An Open Source Software for Exploring and Manipulating Network*s. AAAI Publications, Third International AAAI Conference on Weblogs and Social Media. https://www.aaai.org/ocs/index.php/ICWSM/09/paper/view/154

2. *Edges* are the lines or connections between the vertices (actors). These can be targeted (by inputs and outputs), one-way, or combined (two-way) (Rodríguez-Rojas, 2020, p. 49).[149]

3. *Clusters* refer to agglomerations of vertices in proximity. *Boundary spanners* are vertices that connect different groups within the network. (Brand and Gómez, 2006, p. 7).[150]

4. *Degree centrality*: Social network researchers measure the activity of a vertex using d*egree centrality* to identify the number of direct connections to a vertex. This number determines the importance of the vertex in the graph (Rodríguez-Rojas, 2020, p. 49).[151]

METHODOLOGY

This study seeks to explain the phases of the disinformation process, focusing on media outlets with international reach that are funded by China, Russia, Venezuela, and Cuba as part of their sharp power agendas. The study looks at 86,615 Twitter posts published in Spanish by nine news agencies between September 1, 2019 through September 30, 2020. Through analysis of these posts, the study aims to detect irregular behavior by users driving a disproportionate replication of content. 1,464 profiles were manually reviewed to report on the disinformation process, including the creation, production, and dissemination of messages. This research was divided into two stages:

1. Stage 01: (Reports 1 y 2) Identification of each State's country strategy, together with its central themes and top posts by affiliated media, in order to explore the first two phases of the disinformation process: creation and production of messages.

2. Stage 02: (Reports 3 y 4) Analysis and observation of users who replicate the posts defined in stage 1, in order to address the last phase of the disinformation process: dissemination.

The first report gives an account of the creation and production stages. Thus, the country strategy was identified for each State and from there, central themes presented by country governments were traced and analyzed. Particular issues promoted by governments through the global news agenda were identified, in line with **sharp power** logic. First, a literature review was prepared in order to identify the predominant themes addressed in content used by the countries in question to distract and manipulate audiences. Next, we look at posts by official news media outlets linked to governments.

For the Twitter data collection, two digital tools were used: Karma Fanpage and Python. Karma Fanpage, a marketing webpage, was used to collect tweets produced by media

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[149] Rodríguez-Rojas (2020, p. 49).

[150] Brand and Gómez (2006, p. 7).

[151] Rodríguez-Rojas (2020, p. 49).

outlets affiliated with the selected countries. The use of Python facilitated data collection, management, and organization, and was later used to organize data from Karma Fanpage. A text analysis was then carried out through an open-source repository called ConTexto Library. First, texts were cleaned up to regularize all words and avoid grammatical and syntax errors. Empty words, or stopwords that cloud key terms, were eliminated. An existing compilation of words listed in the GitHub repository was used. Finally, word clouds were generated based on previously processed data to support a relevant analysis.

As expected, the results marked an almost absolute prioritization of issues concerning COVID-19. For this reason, the code was reprogrammed in Python to ignore tweets in which the words: "covid," "coronavirus," "pandemic," "isolation," or "confinement" appear. This was conducted in such a way to track topics that, although they do not hold the same importance as the virus, continue to play a dominant role in the creation of messages by media affiliated with the selected governments.

The research conducted based on the literature review possesses the following characteristics:

1. Temporal delimitation: the study was conducted over thirteen months, from September 1, 2019, to September 30, 2020. In addition to addressing information about COVID-19, different issues that were prioritized before the pandemic are included.

2. An analysis of Twitter accounts run by international, Spanish-language media outlets funded by the governments of China, Russia, Venezuela, and Cuba.

a. China: Xinhua and China Global Television Network (CGTN)

b. Russia: Actualidad RT (and its alternative account RT Última Hora) and Sputnik Mundo

c. Venezuela: TeleSur

d. Cuba: Granma, Prensa Latina, and Cubadebate

The second report continues to analyze the creation and production stages of the information disorder by focusing on the exertion of sharp power in Colombia by the governments of China, Russia, Cuba, and Venezuela. A review of the state of the art was conducted to interpret the strategy developed by these countries in the context of issues related to Colombia. Priority topics were then defined based on the literature review. Subsequently, a quantitative analysis of Twitter posts -published by media outlets from September 1, 2019, through September 30, 2020, and including the word "Colombia," was carried out to contrast and corroborate the results with the findings from the first stage. The same tools used to generate findings in the first report (Karma Fanpage and Python) were also used for the second report. First, the databases in CSV format obtained from the Karma Fanpage website were used. This time, the data excluded posts that do not mention the word "Colombia" and a list of hashtags used by the media outlets was compiled.

In order to identify the rates of publication, that is, the peaks and declines of the number of tweets published by the media outlets studied, a timeline was created to chart the total number of the tweets published each month. Taking into account the peaks, a database review was conducted to select posts that are relevant to priority topics and were generated during a period of heightened activity. The most relevant tweets were selected based on the peaks and the highest number of retweets. To analyze this information, a review of the CSV databases produced by Karma FanPage was conducted, since it allowed researchers to easily locate tweets. However, this database lacks the detailed information of each tweet, since it only shows the number of retweets and comments, not the number of interactions.

Finally, 118 cases were chosen out of 86,615 downloaded tweets, based on the three previous selection criteria -themes of interest to the sharp power of each State, peaks of posts by affiliated media outlets and the highest number of retweets. An analysis was conducted to identify the alleged phenomena of disinformation in Colombia. With this objective in mind, a review was conducted of posts addressing priority issues generated by media outlets during peaks of activity. A portion of select tweets was identified and represented according to their magnitude during the most pronounced peaks. 20 tweets were selected per country, 10 containing general news coverage and 10 referencing Colombia, totaling 80 tweets. It should be noted that the issues related to COVID-19 were limited to reports 2 and 4. An additional 39 tweets were downloaded for the fourth and final report which prioritizes the search for posts covering both the pandemic and Colombia to analyze coverage of the issue in question by select media outlets addressing Colombia.

SECOND STAGE

In the second stage, researchers conducted an analysis of coordinated inauthentic behavior focused on the manipulation of Twitter traffic for users interacting with tweets referring to Colombia, COVID-19 and general topics. It was necessary to identify and characterize how and what user accounts reproduce and disseminate posts created by media outlets affiliated with the States under scrutiny. This required three sequential phases: the literature review, network analysis and user characterization. In the first phase, a glossary was developed to define concepts that are commonly used in the disinformation process such as: coordinated inauthentic behavior, cyber troops, traffic manipulation, bots, cyborgs and humans. In addition, the social network analysis (SNA) methodology was chosen to facilitate the visualization of connections between users.

It is important to mention that the metadata of tweets mentioning general topics and "Colombia" was provided by Tec de Monterrey (TEC), while metadata on tweets mentioning COVID-19 was downloaded by an open-source library also provided by the TEC. From this data collection, the SNA methodology was chosen, which facilitated the visualization of connections between users. The open-source software Gephi was used for the data visualization. This program allowed for mapping of relationships between the different types of users (affiliated media and the accounts that reproduce their information) based exclusively on the case studies from the September 1, 2019 to September 30, 2020 timeframe that were selected and systematized in the second report.

The analysis was focused on interactions such as retweets and likes, since these were the most numerous interactions and they allowed us to demonstrate CIB and cyber troops. To visualize the data in Gephi, it was necessary to organize the data in a CSV document. In total, nine graphs were created to include the following information:

- Graph 1: China, Colombia (CGTN in Spanish and Xinhua in Spanish. Vertices: 374)

- Graph 2: Russia, Colombia (ActualidadRT and Sputnik. Vertices: 23,505)

- Graph 3: Venezuela & Cuba, Colombia (TeleSur, Granma Digital, Cubadebate, and Prensa Latina. Vertices: 5118)

- Graph 4: General (Includes all of the aforementioned media outlets. Vertices: 50,654)

- Graph 5: COVID-19, Colombia (Includes all of the aforementioned media outlets. Vertices: 16,171)

- Graph 6: China, General (CGTN in Spanish and Xinhua in Spanish. Vertices: 568)

- Graph 7: Russia, General (ActualidadRT and Sputnik. Vertices: 55,716)

- Graph 8: Venezuela and Cuba, General (TeleSur, Granma Digital, Cubadebate, and Prensa Latina. Vertices: 11,933)

- Graph 9: General (includes all of the aforementioned media outlets. Vertices: 68218)

The analysis stemming from each of these visualizations included SNA properties including vertices, edges, clusters, degree centrality, and boundary spanners. Finally, a process of identifying and selecting the most representative users in each graph was carried out; those selected had the highest score and largest number of interactions according to Gephi. Boundary spanners, or users that are connected to the media outlets given their interactions demonstrated on the graph, were manually identified. The manual criteria allowed us to observe when users were connected to two, three or up to four media outlets.

Once the most important users were selected, they were evaluated through two machine learning applications to avoid bias and achieve triangulation with the data under observation. It is worth mentioning that the review of these accounts was carried out from April 1 to April 15, 2021, and there are daily changes in the data according to user behavior.

First, we used the Botometer (https://botometer.osome.iu.edu) to classify Twitter accounts as probable bots or humans by analyzing their last 200 tweets, which Twitter's API permits. The different profile characteristics identified by the Botometer were taken into consideration when describing the accounts. These elements include 1. general rating; 2. year the account was created; 3. number of followers; 4. the number of lists to which the

account belongs; 5. number of days with posts; and 6. the number of tweets per week (See Table 1: Identification criteria).

Second, the Pegabot (https://pegabot.com.br) tool was also used to classify Twitter accounts as probable bots or humans by analyzing their last 200 tweets according to the API. Two criteria were chosen to compliment the information on user interactions, replies and retweets, in addition to the account score (see Table 1: Identification criteria). Finally, to complement the analysis, the following criteria were selected manually to identify and expand on their behavior, namely: 1. Verification, 2. Name, 3. Location, 4. Biography photo, 5. Profile photo, 6. The topic of publication, and 6. Profession.

Table 1. Identification criteria

Botometer - https://botometer.osome.iu.edu		Pegabot - https://pegabot.com.br		Manual Criteria	
Bot %	Botometer score (Over 2.9, most likely bot) (Under 2.9, most likely human)	Bot %	Pegabot score (Over 50 percent, most likely bot) (Under 49 percent, most likely human)	V	Verified Not verified
				Location	Geographic location of users
Year	Accounts created since 2009	R	Number of replies Only the last 200 tweets were reviewed per API regulation	Name	Name characteristics
Total T	Total tweets since its creation			Biography Photo	General description of biography photo
Followers	Total number of followers at the time of review	RT	Number of retweets Only the last 200 tweets were reviewed per API regulation	Profile Photo	General description of profile photo
List	The number of lists the account belongs to, not the number of lists created by the user.				
# D P	The number of days with posts. The number of days (up to 7) on which the user tweeted its last 200 posts.				
TPW	The number of tweets per week.				

Lastly, to identify and characterize the behavior of cyber troops, users were observed to determine whether they were alleged cyborgs, highly suspicious users, or suspicious users based on the following criteria:

Alleged cyborgs

According to Ben Nimmo's work as part of the Project on Computational Propaganda at the University of Oxford and the Atlantic Council,[152] cyborg accounts are those whose interactions combine automation with human operation and are characterized by:

1. High volume of posts. They post around 100 to 250 times per day, which means between 700 to 750 weekly posts, including tweets, retweets and replies.

2. Posts include a high percentage of retweets (typically more than 75 percent of its posts are retweets).

Highly suspicious users

This categorization was also developed by Ben Nimmo of the Atlantic Council DFRLab (2016),[153] who classifies highly suspicious users on social networks with the following characteristics:

1. High volume of posts, up to 72 times per day, amounting to up to 504 weekly posts including tweets, retweets and replies.

2. Posts include a high percentage of retweets.

3. Tend to be anonymous accounts, meaning their profile and bio photos do not show their face, rather have other visual information that does not allow their identity to be revealed.

Suspicious users

This classification was developed on its own, taking into account Ben Nimmo's suggestions and social network automation offered by Buffer companies that configure user accounts to publish automatically.[154] Suspicious users have the following characteristics:

1. High volume of posts, more than 14 times per day, or more than 98 posts per week.

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[152] Nimmo, B. & Atlantic Council. (2019). Measuring Traffic Manipulation on Twitter. *Computational propaganda research project.* https://demtech.oii.ox.ac.uk/research/posts/measuring-traffic-manipulation-on-twitter/.

[153] Nimmo, B. (Dec. 23, 2016). Human, Bot or Cyborg? Three clues that can tell you if a Twitter user is fake. *Atlantic Council.* Available at: Human, Bot or Cyborg?. Three clues that can tell you if a… | by @DFRLab | Medium.

[154] Ibid.

2. Posts include a high percentage of retweets (typically more than 75 percent of its posts are retweets).

3. Tend to be anonymous accounts, meaning their profile and bio photos do not show their face, rather have other visual information that does not allow their identity to be revealed.

4. Topics of posts tend to be exclusively political.

Table 2. Summary of the report methodology

First stage: Country strategy - analysis of the disinformation process (creation and production)					
Report 1			**Report 2**		
Steps	**Objective**	**Identify the country strategy of the States under scrutiny**	**Steps**	**Objective**	**Identify the country strategy of the States under scrutiny in Colombia**
S01	Literature review	Sharp Power (Walker, 2018)[155] Disinformation (Wardle, 2017)[156]	S01	Review of literature on Colombia	Sharp Power (Walker, 2018)[157] Disinformation (Wardle, 2017)[158]
S02	Identification and selection of international media outlets funded by States (GEC, 2020)	Twitter social network (Spanish) China (2), Russia (3), Venezuela (1), Cuba (2)	S02	Identification of topics by media outlet	Word clouds and hashtags 2. Colombia 3. COVID-19
S03	Temporal delimitation	13 months (September 1, 2019, to September 30, 2020)	S03	Identification of publication rates	Graphs of publication peaks

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[155] Walker (2018).

[156] Wardle, C. (December 10, 2017). Fake news. It's complicated. - First Draft Footnotes. *Medium*. Available at: https://medium.com/1st-draft/fake-news-its-complicated-d0f773766c79.

[157] Walker (2018).

[158] Wardle (2017).

S04	Analytical distinction	1. General 2. Colombia 3. Covid	S04	Selection of case studies (logic)	40 General (40 downloads) 40 Colombia (39 downloads)
S05	Tweet download	Karma FanPage/Python - Total: 130,711	S05	Tweet downloads	Download tool (TEC)
S06	Identification of topics by media outlet	Word clouds and hashtags	S06	Identification of topics by media outlet	Word clouds and hashtags
Second stage: users - analysis of the disinformation process (dissemination)					
Report 3			**Report 4**		
Steps	Objective	Identification of cyber troops, general	Steps	Objective	Identification of cyber troops, Colombia and COVID-19
S01	Literature review	Information Disorder (Wardle and Derakshan, 2017)[159] Cyber troops (Bradshaw and Howard, 2019)[160] Manipulation/Coordination on Twitter (Nimmo, 2019)[161]	S01	Literature review	Information Disorder (Wardle and Derakshan, 2017)[162] Cyber troops (Bradshaw and Howard, 2019)[163] Manipulation/Coordination on Twitter (Nimmo, 2019)[164]
S02	Identification of users	Users with inauthentic behavior	S02	Selection of case studies (Peaks-Monthly-Retweets)	Selection of cases about COVID-19.

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[159] Wardle and Derakshan (2017).

[160] Bradshaw and Howard (2019).

[161] Nimmo & Atlantic Council (2019).

[162] Wardle and Derakshan (2017).

[163] Bradshaw and Howard (2019).

[164] Nimmo & Atlantic Council (2019).

S03	Creation of graphs	Social networking analysis (SNA) User networks (Gephi)	S03	Identification of users	Users with inauthentic behavior
S04	User classification	Cyborgs - Highly suspicious users - Suspicious users	S04	Creation of graphs	Social networking analysis (SNA) User networks (Gephi)
S05	Geographic location of users		S05	User classification	Cyborgs - Highly suspicious users - Suspicious users
S06			S06	Geographic location of users	

Assumptions (based on literature)

States such as Cuba, China, Russia, and Venezuela have been promoting disinformation around the globe through their media affiliates. Bound by their strategy, each State's disinformation activities reflect particular interests. In this sense, although a hard style line can be recognized in the message, this line will have specific nuances depending on the country where the message is intended to be disseminated. Although Colombia does not seem to be a priority country for these disinformation activities, the States mentioned do maintain a particular discourse in posts that reach the country. In the unique case of Russia, Colombia is a relevant vertex. Moscow has a particular interest in using Colombian conjunctures to delegitimize U.S. political currents and undermine liberal institutions, distancing Bogotá and Washington.

RESULTS: COLOMBIA & COVID-19

China

Country Strategy

In the particular context of Latin America, the Chinese strategy is based on sharp power and is consistent with its global objectives. China's interest in cleaning up the image of

the Communist Party and promoting a Beijing that is both respectful and a supporter of the liberal world order is maintained through its efforts in the region. China has generated confidence in the region by positioning itself as a benefactor of lesser developed countries. In this sense, while it does not challenge the economic structures that emerged after the Bretton Woods Agreement of the mid-twentieth century, it does highlight flaws that it intends to help solve. José Ignacio Martínez (2013, p. 9)[165] explains:

The international system that arises after the Bretton Woods Conference […] is constituted by the hegemonic interest of the U.S., which used the superstructure to consolidate itself as the highest power. This is the main criticism that China makes of the current international regime and manifests, mainly after the financial crisis of 2008, that the rules emanating from the Second World War should be modified.

Thus, China is earning its place as an ally of the lesser developed countries. Part of this endeavor has been to structure economic relations without conditions based on values, as does the West. Beijing has facilitated commercial interactions without political and social requirements such as respect for human rights, democracy, good governance, etc. On the other hand, it has been introduced as the great rising power, ready to help the growth of countries falling behind ,[166] which is striking for third world countries in general and, in particular, those in Latin America.

Government Affiliated Media Outlets

	China Global Television Network (CGTN), formerly known as part of CCTV. It was launched on December 31, 2016 as a multiplatform media group (television and social networks) in different languages, including Spanish (Peilei and Albornoz, 2018).[167] According to Sun (2018),[168] this government-affiliated media outlet seeks to inform and / or tell the world from the Chinese perspective as well as position itself as a globally recognized media outlet Twitter account details: - User: @cgtnenespanol - Created: August 5, 2016 - Total tweets: 48,768 - Followers: 593,209

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[165] José Ignacio Martínez (2013, p. 9).

[166] Zhao, S. (2015). The China model: an authoritarian state-led modernization. En C. Freeman, *Handbook on China and Developing Countries* (pp. 21-50).

[167] Peilei and Albornoz (2018).

[168] Sun L. (2018) Developments and New Approaches of Internationalizing China's Media: A Case Study of China Global Television Network (CGTN) in Witness Perspective. *Global Media Journal*. https://bit.ly/35XfL31.

Link	[CGTN en Español (@cgtnenespanol) / Twitter](https://twitter.com/cgtnenespanol)
	Since its inception in 1937, Xinhua has become the most significant figurehead for generating information in China. This outlet is a government institution setting the tone for other media. The Communist Party has set out to exert its influence through Xinhua. Xinhua depends on the State and is run entirely by the government and the Communist Party (Principe, 2010).[169] In February and July 2012, Xinhua created an account in English (@XHnews) and another in Spanish (@XHespanol) to expand its influence through the daily publication of informative content. Twitter account details: - User: @XHespanol - Created: July 28, 2012 - Total tweets: 93,960 - Followers: 593.209
Link	[China Xinhua Español (@XHespanol) / Twitter](https://twitter.com/XHespanol)

What are the most published topics about Colombia?

CGTN in Spanish	Xinhua in Spanish

From September 1, 2019 to September 30, 2020, the media outlets affiliated with the government of the Chinese Communist Party differ significantly when it comes to addressing Colombia. On the one hand, Xinhua gave priority to COVID-19, mainly

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[169] Principe Hermoso, S., Real Rodriguez, E., & Aguidez Calvo, P. (2010). The Chinese media structure in the context of globalization: between the market perspective and mechanisms to protect the system. *Complutense University of Madrid*, 153. https://revistas.ucm.es/index.php/HICS/article/view/HICS1010110149A.

highlighting the number of infections in Latin America. On the other hand, CGTN addressed the pandemic to a lesser extent, and simultaneously made numerous mentions about President Ivan Duque, and used hashtags and words such as "coffee," "Chinese economy," "Chinese culture," and "diplomatic relations."

What months had the most CGTN and Xinhua posts about Colombia?

Number of tweets about Colombia	Number of tweets about Covid
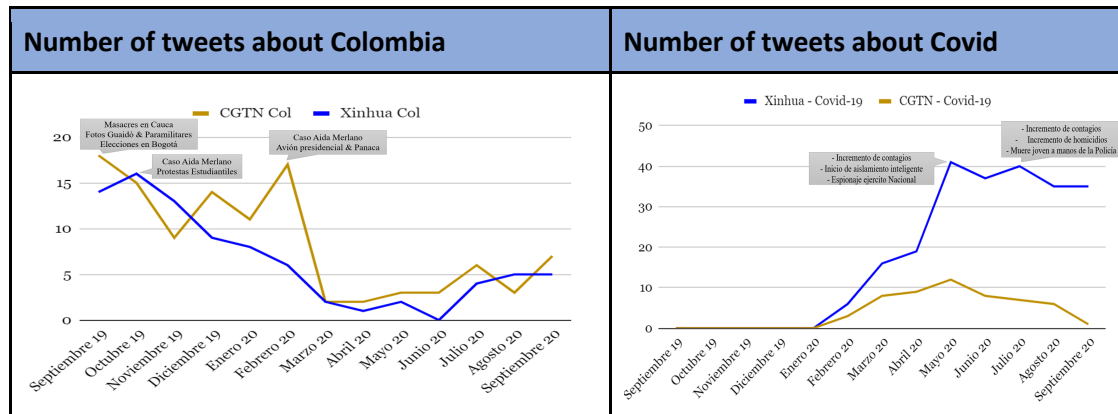
For Xinhua in Spanish, the most pronounced peaks were during May and July 2020, when it covered the topic of Covid in Colombia. Interestingly, a decrease is seen in the volume of posts with general coverage of Colombia, dropping from more than 15 to 5, and hitting 0 in June. In addition to showing fairly limited coverage of Colombia, this confirms that most of Xinhua's content was focused on the pandemic. When generating coverage about Covid, most tweets inform users about the number of cases in Latin America based on data provided by Johns Hopkins University (JHU), while a smaller set of posts addresses the management of the pandemic by the Colombian government and the requests and problems of the health and economic sectors. Finally, the impact of Xinhua posts is not very high; this is seen in the number of interactions that users have with its content. For example, within the period of analysis, the tweet that had the most interaction obtained a maximum of 367 retweets and 60 comments.

By comparison, CGTN's coverage of the pandemic is significantly lower compared to that of Xinhua. Its highest peak was in May 2020, during which it reached 10 tweets throughout the month. These tweets referenced a Colombian venture making disposable coffins to attend to deaths due to the pandemic. However, its coverage of general topics is similar to that of Xinhua, except for peaks between December 2019 and February 2020 during which mainly economic, sports, political and military issues were discussed. These issues included: the world avocado congress; the success of ventures stemming from the peace agreement; news about Colombian cyclists abroad; the fight against drug trafficking; the 40 years of diplomatic relations between both countries; and the Colombian government's participation in multilateral meetings, as well as some posts on China's technological advances. Information about the coronavirus was presented through both a community and institutional lens. Community-centered content highlighted relevant news about the Asian diaspora in Colombia, including posts about businesses, citizens and civil society organizations in Colombia that sent medical supplies to support their country of origin. Institution-centered content included an interview announcing the

appointment of the new Chinese ambassador to Colombia, Lan Hu, as well as posts about how Colombia can help other countries in the region detect Covid, but also how it needs to focus on itself first to get ahead.

It is important to mention that the content (videos) of some of these CGNT posts was not created by the outlet, but rather by independent media outlet AP-Associated Press. CGNT also resorted to reproducing the Johns Hopkins University (JHU) statistics on the pandemic and to pointing out social and medical problems that arose when President Iván Duque declared national quarantine. Finally, CGTN has a lower number of interactions in comparison to Xinhua; its most interactive content published during the period of analysis reached a maximum of 55 retweets and only 10 comments.

What were the most retweeted "case study" posts on Colombia or Covid in Colombia?

May 2020	July 2020	July 2020
September 2019	**May 2020**	**July 2020**

What do the user interactions of these case studies look like?

This graph visualizes the Chinese network in Colombia and is made up of 374 profiles / vertices. When observing the behavior of users who most interacted (retweets and comments) with Chinese media content about Colombia, a polarized graph is formed. There is only one user who acts as the boundary spanner. This user is: @OJOVENE
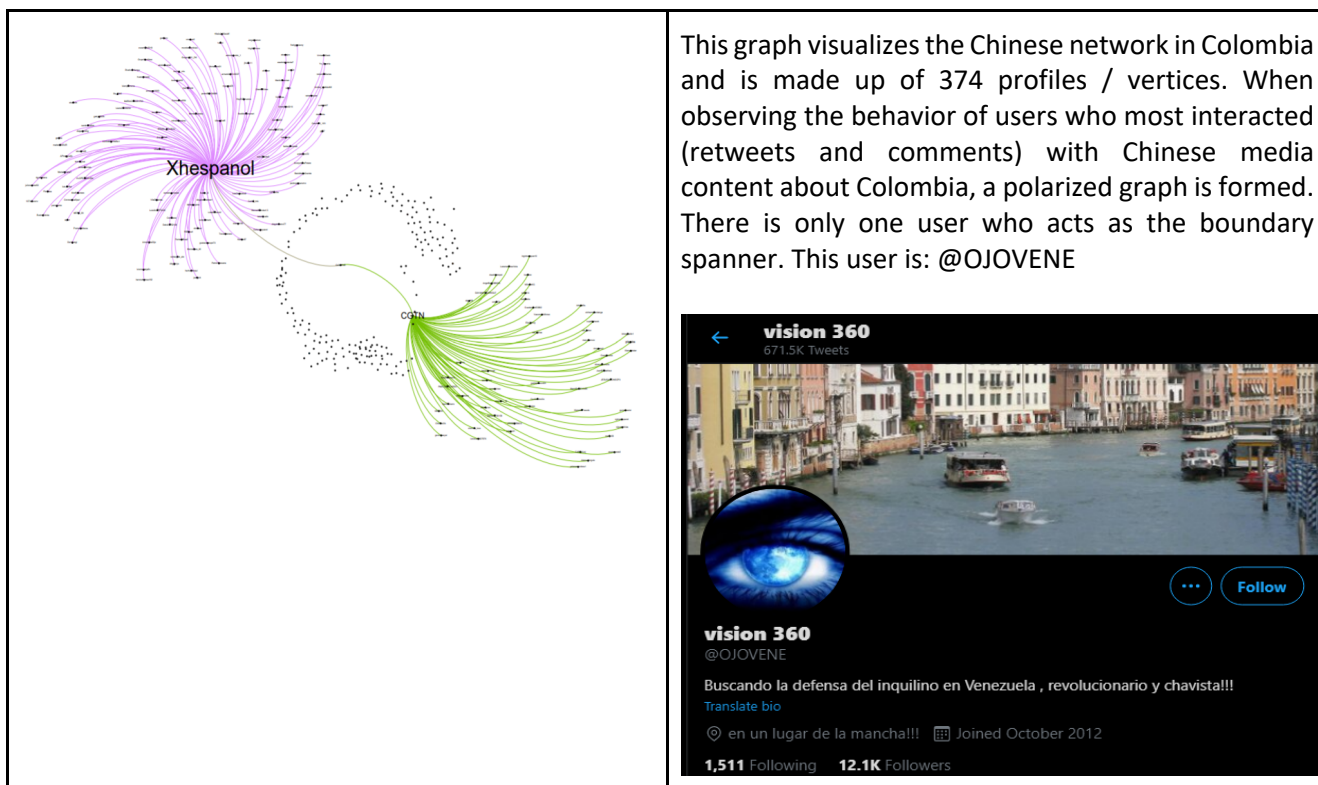
Who are the users who disseminate Chinese media content and where are they located?

A total of 184 users who disseminate Chinese media content about Colombia were manually reviewed. Due to their disproportionate behavior, 19 accounts were classified as alleged cyborgs. These accounts had very high publication rates, ranging from 750 to 3,800 weekly (TPW), and had a high percentage of retweets (R-RT). These alleged cyborgs are located[170] in: Venezuela (6), Argentina (3), Colombia (2), Uruguay (2), Chile, Mexico, El Salvador, and Brazil, among others (1). In addition, three profiles located in Venezuela (2) and Mexico (1) were classified as **highly suspicious users** because they had 620 to 680 weekly posts and a high percentage of retweets.

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[170] It is necessary to clarify that not all accounts show their geolocation. For those that do not, we infer their origin through observations about their content and profile. We classify the latter as presumptive, and in the table it is labeled with a "P" that comes before the name of the country where they were located.

Alleged cyborgs							
Screen name	**TPW**	**% R-RT**	**Loc**	**Screen name**	**TPW**	**% R-RT**	**Loc**
BRASIL_ACABOU	3800	78	Brazil	JuanBFMartinez	1200	99	Argentina
Gonzafalso564	2400	97	Uruguay	mgamba58	1200	100	Colombia
AlejandroSig	2300	80	Chile	lalobernal1	1100	100	Mexico
alitapaz	2000	96	Argentina	mundoennoticias	1100	88	El Salvador
OJOVENE	1600	66	Venezuela	barcosthomas192	1100	100	Venezuela
machadodz	1500	92	Venezuela	gustavocrespo73	960	94	Uruguay
LupeMohawk	1400	80	P. Colombia	PMATABASTARDO	790	69	Venezuela
PrometeoNews	1400	99	Venezuela	Ivanelov	770	100	Venezuela
VirgilioPonce	1400	99	P. Cuba	ChiofaloOk	750	96	Argentina
Highly suspicious users							
geniuslawyer	680	89	P. Venezuela	JPEREGRINO3	620	89	P. México
mariyu64	640	93	P. Venezuela				

Nonetheless, a total of 36 users classified as **suspicious users** were found in the most retweeted posts about Colombia published by Chinese media outlets. These profiles are characterized by: 1. They generate a high volume of posts since they exceed 14 posts a day, that is, more than 98 posts a week; 2. Their posts include a high percentage of retweets (typically more than 75 percent of their posts are retweets) and are coming from several Latin American countries: Colombia (9), Venezuela (8), Ecuador (4), Mexico (3), Peru, Chile, Nicaragua, and Cuba, among others (1).

Suspicious Users							
Screen name	**TPW**	**% R-RT**	**Loc**	**Screen name**	**TPW**	**% R-RT**	**Loc**
ethienyren	690	93	P. Venezuela	AbgBorys	300	98	Ecuador
ramedugonzalez	630	96	Ecuador	ElsaMendez23	290	98	P. Venezuela

elespejoc	580	87	Colombia	Lorena38827676	280	91	P. Colombia
fabfashionista8	530	90	Colombia	perrogente	260	93	Venezuela
yesadecipo	520	100	Argentina	MariaAdrianaT	250	79	Ecuador
luismoralejafin	520	100	Venezuela	diogenesherdez1	240	86	Venezuela
LeoJarBar	520	87	Colombia	omar67p	220	95	P. Mexico
JonasGunnes	520	63	Mexico	otreborpretell	220	79	P. Peru
observadortwits	480	93	Colombia	destruirla	220	100	S.I
gumerpastor	470	93	Rep. Dominicana	1ffe0c2d05b44ff	220	100	S.I
JESUSALFONSOP3	460	79	P. Colombia	NSceroKG	200	100	P. Colombia
AlemanAngulo	420	91	P. Bolivia	GARCÍAJej	170	100	Venezuela
diegobriceno77	380	87	P. Colombia	Elis29Yuly	160	99	P. Ecuador
Carlos_tmk	380	96	Chile	oscartigre2019	140	96	P. Colombia
Victor31340213	340	100	S.I	hachadetoqui	130	100	P. Chile
Kaleno87	330	91	Nicaragua	CIPICuba	130	75	Cuba
CrazyHourse	320	98	Venezuela	lourdes_cris	120	100	P. Mexico
jgonzaca	320	99	P. Venezuela	geolize	100	98	Venezuela

Who are the possible members of China's cyber troops in the region and where are they located?

184 profiles were analyzed manually to decipher the geographic location of audiences or users that amplify the content about Colombia generated by these Chinese media outlets. As a result, it was found that these accounts are located mainly in Latin America (Venezuela, Colombia, Mexico, Argentina, Chile, Brazil, Ecuador, and, to a much lesser extent, in Central American countries). Even though these posts contain content exclusively about Colombia, the main interactions come from users located in Venezuela.

Of the 184 users who disseminate Chinese media content about Colombia, 64 percent of the accounts observed are more likely to be organic accounts, that is, they have normal behavior, while 10.2 percent can be classified as alleged cyborgs due to their semi-automated behavior. 19.4 percent are suspicious users and 1.6 percent are highly suspicious users. Lastly, 4.3 percent of accounts were suspended from review since they would violate Twitter regulations. The above suggests that a portion of the possible members of the cyber troops are semi-automated and inauthentically manipulating content. However, due to the number of interactions, there is no evidence pointing towards a strong positioning of this content on Twitter during the period studied.

Conclusions

Topics

 According to literature, China uses its media to disseminate propaganda as part of the disinformation process, that is, it tells its own story and simultaneously approaches developing countries as an ally by being respectful of the domestic problems of each country. This concurs with the findings of the present study. After analyzing media content over 13 months, it was found that posts by CGTN and Xinhua accounts in Spanish promote content related to the following: business opportunities stemming from the peace agreement; government actions against drug trafficking; research; environmental topics;

and to a lesser extent, tensions around domestic policy in Colombia and China's willingness to support countries in the region in times of crisis.

Covid

Differences were found in the content published by CGTN and Xinhua. On the one hand, Xinhua exclusively reported on the coronavirus, constantly posting about the number of cases in Latin American based on the data provided by Johns Hopkins University (JHU) as well as on relevant decisions of the Colombian government under the leadership of Ivan Duque, reaching a total of 229 tweets over 8 months. On the other hand, CGTN addressed the pandemic by focusing on community and institutional aspects with a total of 54 tweets in the same period. However, neither of the two mediums generated popular content, since the maximum number of interactions through retweets was 367 and 55 respectively. In conclusion, propaganda related to COVID-19 was aimed at maintaining a positive image of China, however, its impact was limited.

User manipulation

As a result of the analysis of 184 possible Chinese cyber troop accounts working to amplify content about Colombia, the majority of users were classified as organic. However, 19 accounts were classified as alleged cyborgs and three were classified as highly suspicious users for their inauthentic behavior. This suggests minimal manipulation of traffic on Twitter, which mainly consists of excessive reproduction of content. Furthermore, these audiences are located mainly in Venezuela (43), Colombia (29), Mexico (20), and Argentina (12), even though the content was exclusively about Colombia.

User coordination

In the disinformation process, there is generally coordination between users in the dissemination of information to strategically reproduce certain content. We found little coordination between possible members of Chinese cyber troops disseminating content about Colombia. After observing the behavior of 374 users, only one user is connected to CGTN and Xinhua during the period of study. Twitter user @OJOVENE was classified as a presumed cyborg since it exceeded 700 interactions per week, most of them being retweets.

Russia

Country strategy

The growth of Russia's presence in Latin America in recent years is due to its strategy to position itself as a world power with the ability to undermine the traditional leadership of the U.S. as well as to confront China as an emerging power (Rouvinski, 2017;).[171] [172] Russia has worked to strengthen its economic ties to Brazil and Mexico as its main trading partners. In addition, Russia has a closer relationship with Venezuela, Cuba, and Nicaragua due to its political affinity. To reduce Washington's influence, Russia has used the sale of military weapons as a strategy to approach other countries in the region such as Colombia, which has acquired some of these weapons thanks to the Russian state company Rosoboronexport.

However, creating an imbalance in Colombia's close relationship with the U.S. has not been easy. According to Arias-Retana (2020),[173] Colombia is the new target for Russian disinformation due to its geographical proximity to Venezuela and Central America. Russian sharp power allegedly comes into play through the content produced by its Spanish-language media outlets, which highlights Colombia's democratic and institutional weaknesses such as corruption, cronyism and human rights violations by police during social protests. This is consistent with narratives used in Kremlin media outlets around the world, which underline challenges faced by democratic societies in attempts of inclusion as a result of their decadence and moral superiority (EUvsDisinfo, 2019).[174] Since 2019, Russian media outlets have coordinated online content production during civil protests. In addition, accounts of alleged spies and Russian planes in Colombia have caused a great stir at the national level; Ivan Duque's government has stated that this alleged interference seeks to destabilize the country and convert it into a new Venezuela and/or Cuba.

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[171] Rouvinski (2017).

[172] Milosevich-Juarist, M. (2019). Working document. Russia in Latin America: repercussions for Spain. *Elcano Royal Institute*. https://bit.ly/3eFFeBH

[173] Arias-Retana, G. (April 9, 2020). New Target of Russian Disinformation. Diálogo Digital Military Magazine. https://bit.ly/3rKK9HF.

[174] EUvsDisinfo (2019).

Government Affiliated Media Outlets

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Russia's media advancement in the Spanish-speaking region has occurred at a multiplatform level (television and social networks such as Twitter, Facebook and YouTube). It began in 2009 with InterRussia TV Channel (ITR TV), the first television channel targeted at Latin American viewers. Operations stem from Panama and include 12 Russian outlets, including Russia Today (RT). RT in Spanish reaches Argentina, Venezuela, Bolivia, Ecuador, and Cuba.[175]

Twitter account details:
- User: @ActualidadRT
- Created: December 31, 2009
- Total tweets: 707,658
- Followers: 3,501,642

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<td>Link</td>
<td>RT en Español (@ActualidadRT) / Twitter</td>
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Sputnik is the Russian radio broadcasting and news agency founded on November 10, 2014 (Missiroli, Andersson, Jan and Gaub, 2016).[176]

Its presence reaches 130 cities and 34 countries, and its content is published in 30 languages (Singer, 2018; Perez, 2020).[177] [178] It has a smaller alternate Twitter account @Sputnik_Report (Sputnik Reporteros (@Sputnik_Report) / Twitter) that was created on June 13, 2018.

Twitter account details:
- User: @SputnikMundo
- Created: February 16, 2011
- Total tweets: 315,888
- Followers: 144,503

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<td>Link</td>
<td>Sputnik Mundo (@SputnikMundo) / Twitter</td>
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[175] Milosevich-Juarist, M. (2019). Working document. Russia in Latin America: repercussions for Spain. *Elcano Royal Institute*. https://bit.ly/3eFFeBH

[176] Missiroli, Andersson, Jan, and Gaub (2016).

[177] Singer (2018).

[178] Perez (2020).

	RT Ultima Hora is an alternate Twitter account of Actualidad RT in Spanish, which focuses on international breaking news. Twitter account details: - User: @RTUltimahora - Created: February 9, 2018 - Total tweets: 22,634 - Followers: 359,008
Link	RT Última Hora (@RTultimahora) / Twitter

What Colombian topics are most published by Russian media?

RT in Spanish	RT Ultima Hora	Sputnik Mundo

The three topics about Colombia most published by ActualidadRT and Sputnik Mundo are 1. the national government of Duque and his political party; 2. the government of Venezuela and 3. social protests, civil society leaders and human rights violations. In contrast, RT UltimaHora published information mostly on the COVID-19 pandemic and news about Brazilian President Jair Bolsonaro. The first two outlets focus on Duque's administration and the former senator and president Álvaro Uribe. Mundo Sputnik repeatedly mentions the government's connection to paramilitarism, which is evident in the use of hashtags #ñeñepolitica and #losrastrojos. The second most published topic is the social protests of 2019 and 2020. Both ActualidadRT and Mundo Sputnik publish content highlighting human rights violations by way of the controversial use of public force in the streets, especially by the National Police. This is evident through the use of hashtags such as #paronacional, #21n, #27n, #21paronacional, and

#21somostodosyoparoel21nsinmiedo. This coincides with Rodriguez-Rojas (2020),[179] who states that one of the tools used by RT in its coverage of Colombia is the use of the designated hashtags. ActualidadRT uses #dilannomuriolomatados to commemorate the murder of Dilan Cruz by the Mobile Anti-Disturbance Squadron (ESMAD) during these protests. However, both media outlets highlight the peaceful civil society actions, particularly the *cacerolazos* and artistic protests that demonstrate social discontent with the current policies of the national government. This aligns with the media's objective to "to tell the truths that others do not tell," which distinguishes these outlets from traditional Colombian media such as Semana Magazine and El Tiempo and thus attracts new followers of the so-called "new left."[180]

Which months had the most Russian posts about Colombia?
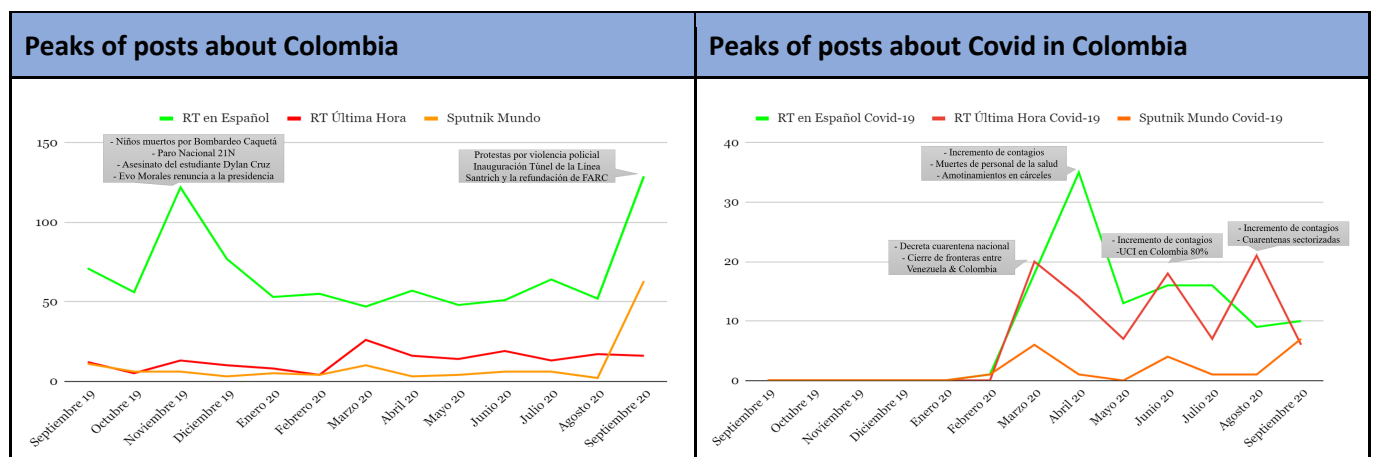
It is apparent that Russian media provides scarce coverage of COVID-19 in Colombia, while its coverage of other issues is greater: up to 125 tweets in peak months. ActualidadRT is the most prolific medium covering Colombian issues, considering its volume of posts is considerably higher compared to Sputnik Mundo and its alternate account Ultima Hora (RTU). This medium has relatively high publication peaks in November 2019 and September 2020, when its content was most focused on social protests, human rights violations, and critiques of Ivan Duque's government. The most viral posts feature YouTuber Inna Afinogenova (@inafinogenova) who is known for her political analysis of the region on the channel "Here it goes." This approach to analyzing the country's situation is consistent with Russia's sharp power strategy, which focuses on addressing the shortcomings of democratic governments. Its coverage of COVID-19 reduced significantly, with pronounced peaks in April and July 2020 due to content focused on social and health crises resulting from the pandemic's impact on certain communities. For example, in March 2020, ActualidadRT used a narrative marked by

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[179] Rodriguez-Rojas (2020).

[180] Ter, M. (2018). Propaganda for foreign audiences. In Tarín, A., Ter, M. & Vázquez, M. (Ed). *The media system and propaganda in Putin's Russia.* Social communication editions and publications (p. 109-134).

humor and sarcasm, as noted by EUvsDisinfo (2019).[181] A tweet about a drunk Colombian citizen that did not comply with lockdown measures and was mocking and arguing with police went viral. This story was characterized by the hashtag #LadyCuarentena. Although its reach was rather low (with only 826 retweets and 166 comments) in comparison to other content, the hashtag gained broader traction on other social networks such as YouTube and TikTok.

The second media outlet with the most posts about Colombia is RT, which constantly covers the country's situation with an average of 10 monthly tweets. However, it experienced a slight increase in March 2020 when it addressed judicial issues and riots occurring in the prisons of Bogota. RT is the Russian outlet that generates the most content on COVID-19. It has three pronounced peaks -March, June and August 2020- during which it reported on the number of COVID-19 cases and government decisions regarding quarantine measures. It is worth mentioning that in July 2020 (a month with few posts), RTU tweeted the announcement that Mexico, Colombia, Peru, and Brazil will purchase Avifavir, a Russian pharmaceutical drug used to combat COVID-19 symptoms. Although this publication did not have a wide reach (with only 680 retweets and 83 comments), Colombian media outlets such as Revista Semana, among others, responded with a set of press releases and tweets with official statements from the Ministry of Health that denies this news (we elaborate on this case later on in the report).

Sputnik Mundo is the third Russian media outlet with the most posts about Colombia. It had an abrupt growth spurt in September 2020, growing from 2 to 10 posts a month to 108. There is little interaction with Sputnik Mundo's content about Colombia; comments and retweets do not surpass 100 interactions. However, posts during its peak in September 2020 were focused on two issues. First, foreign policy: this included content about Colombia's relationship with the U.S. and strategies to address drug trafficking, as well as migration of Venezuelans; human rights violations; and tensions with the Organization of American States and the United Nations Security Council. Second, domestic security policy: this included posts about FARC and ELN attacks; corruption; paramilitarism related to former president Uribe; and the violation of human rights of minorities, civilians and students. This coincides once again with the Moscow narrative, highlighting existing problems with Colombia's democratic institutions. There are only seven posts about COVID-19, which is significantly low. These posts address the number of infectious cases, border relations with Venezuela and the government's strategy for dealing with the pandemic[182].

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[181] EUvsDisinfo (2019).

[182] Despite having the database with tweets from Sputnik Mundo, the Twitter API did not allow its complete download. When manually searching for the information, only a few tweets were found. This suggests that the data from these posts was deleted.

Which "case study" posts had the most retweets?

September 2019	November 2019	September 2020

RT en Español ✔
@ActualidadRT
🔒 Medios afiliados al gobierno, Rusia

-¡Mire las cosas dantescas que ocurren en casa de mi vecino!
-Pero si esa foto es en el salón de su propia casa, no en la del vecino.
-¡Es para dar contexto, hombre!
@inafinogenova
Translate Tweet

¡Dígalo con fotos! (¡Pero no falsas, hombre!)

¿De contexto o falsas?
Las fotos que presentó ante la ONU el presidente colombiano para acusar a Venezuela de complicidad con la guerrilla se le volvieron en contra a las pocas horas de su discurso.

5:23 PM · Sep 30, 2019 · Twitter Media Studio

9K Retweets   876 Quote Tweets   10.4K Likes

RT en Español ✔
@ActualidadRT
🔒 Medios afiliados al gobierno, Rusia

Echando un vistazo a la realidad social de Colombia, lo más sorprendente de las recientes protestas no es ni su magnitud ni sus demandas... sino que pasaran más de 40 años sin producirse
@inafinogenova
Translate Tweet

¿PROTESTAS EN COLOMBIA? ¿DE QUÉ ME HABLAS, VIEJO?

Masivas marchas en Colombia: ¿por qué ahora? Te lo explicamos
Desde 1977, Colombia no vivía un paro nacional comparable a las jornadas que vive actualmente. ¿Qué ocurrió para que una protesta de esta magnitud tardara más de 40 años?

12:07 PM · Nov 28, 2019 · Twitter Media Studio

9.7K Retweets   739 Quote Tweets   11.4K Likes

RT en Español ✔
@ActualidadRT
🔒 Medios afiliados al gobierno, Rusia

La respuesta de la policía colombiana ante las protestas contra el brutal homicidio de Javier Ordóñez fue... más brutalidad y más homicidios

Con .@inafinogenova
Translate Tweet

COLOMBIA ¿UNA POLICÍA EN GUERRA PARA UN PAÍS "EN PAZ"?

Violencia policial en Colombia: el homicidio de Javier Ordóñez
El homicidio de Javier Ordóñez a manos de la policía colombiana provocó violentas protestas que fueron reprimidas con armas de fuego, lo que dejó al menos 13 fallecidos.

12:55 PM · Sep 15, 2020 · Twitter Media Studio

3.1K Retweets   208 Quote Tweets   3.4K Likes

March 2020	March 2020	April 2020

RT Última Hora ✔
@RTultimahora
🔒 Medios afiliados al gobierno, Rusia

ÚLTIMA HORA:
Iván Duque decreta aislamiento general obligatorio en Colombia a partir del martes es.rt.com/7fr7
Translate Tweet

ÚLTIMO MO

0:00   49.3K views

10:33 PM · Mar 20, 2020 · TweetDeck

631 Retweets   47 Quote Tweets   1,054 Likes

RT en Español ✔
@ActualidadRT
🔒 Medios afiliados al gobierno, Rusia

Esta mujer es conocida como #LadyCuarentena por un video viral en el que insulta a policías de Colombia que la multaron por incumplir las medidas de cuarentena en Bogotá mientras se encontraba ebria
Translate Tweet

Visit actualidad.rt.com

No hay trancones, no hay carros...
ojalá se pudiera and...
▶ 111.7K views   0:08 / 1:50

María Victoria se convirtió en #LadyCuarentena en Colombia
Esta mujer es conocida como #LadyCuarentena por un video viral en el que insulta a policías de Colombia que la multaron por incumplir las medidas de cuarentena en Bogotá mientras se encontraba ebria.

10:47 AM · Mar 27, 2020 · Twitter Media Studio

828 Retweets   166 Quote Tweets   1,361 Likes

RT en Español ✔
@ActualidadRT
🔒 Medios afiliados al gobierno, Rusia

Residentes de la ciudad colombiana de Soacha cuelgan telas rojas en sus puertas y ventanas para indicar al Gobierno de Iván Duque que necesitan ayuda económica y humanitaria
Translate Tweet

0:08   97.3K views

Cuelgan telas rojas en puertas y ventanas de Colombia
Residentes de la ciudad colombiana de Soacha cuelgan telas rojas en sus puertas y ventanas para indicar al Gobierno de Iván Duque que necesitan ayuda económica y humanitaria.

11:55 AM · Apr 6, 2020 · Twitter Media Studio

957 Retweets   66 Quote Tweets   1,147 Likes

What do the user interactions of the most retweeted case studies look like?

This graphic represents user interaction with tweets from ActualidadRT (purple), Sputnik Mundo (green) and Inafinogenova (orange). This web is composed of 23,505 vertices (the total number of users that interacted with select posts) and 24,118 edges (the number of connections between users and content). The graphic demonstrates that ActualidadRT has the highest number of users reproducing information. Secondly, YouTuber Inafinogenova (which is affiliated with ActualidadRT), is linked to a high percentage of these users. Finally, Sputnik Mundo has fewer users, but also spreads messages generated by Russian-affiliated media. This graphic also shows the number of boundary spanners (users that interact with two or more media outlets). This allows us to conclude that there is high proximity between ActualidadRT and Inna, and suggests coordinated efforts to disseminate information in the region. The connection to Sputnik Mundo is significantly less and therefore discards the possibility of CIB.

Who are the users disseminating content about Colombia and where are they located?

A total of 247 users who disseminate Russian media content about Colombia were manually reviewed. Of these users, 40 accounts can be classified as **alleged cyborgs** due to their disproportionate behavior; their publication rates are very high, ranging from 720 to 12,000 weekly (TPW), and have a high percentage of retweets (R-RT). These users are located mainly in the Americas: (32) Colombia; (2) Venezuela; (1) Argentina; (1) Ecuador; (1) U.S.; and two additional users whose origin was not identified.

Alleged cyborgs							
Screen name	TPW	% R-RT	Loc	Screen name	TPW	% R-RT	Loc
CmarcaFederal	12000	96	Colombia	Vistacha	1300	84	P. Colombia
Efraindlrda	9900	98	Colombia	CortizJ_	1300	88	Colombia
DuroBelinda	6800	100	Colombia	sandrayamilec	1300	100	Colombia

Screen name	TPW	% R-RT	Loc	Screen name	TPW	% R-RT	Loc
NoraArrubla	4900	81	P. Colombia	andfabian18	1200	97	No ID
Aemon3428	4600	80	P. Colombia	quiropraxiacv	1200	91	Colombia
HefzibaInes	3800	87	P. Colombia	GoVladymir	1100	100	Colombia
fransuarezq	3000	100	P. Ecuador	elprofecandanga	1100	70	Venezuela
anturio06	3200	78	P. Colombia	zulmaroquera	1200	100	P. Colombia
AlvaroPoGonzlez	2900	98	Colombia	zulmaroquera	1200	100	P. Colombia
Elecel1942	2800	86	Argentina	Flondonosua	1100	100	Colombia
NoraArrubla	2800	75	Colombia	susananbrizuela	940	97	P. Colombia
diligitis19	2700	91	P. Colombia	CaroGC	810	81	P. Colombia
juanyepes3	2700	98	P. Colombia	alejanaliza	770	88	P. Colombia
JairoGarcíaXXI	2400	100	P. Colombia	mariposafyf	750	96	P. Colombia
MaryAco92165707	2400	99	P. Colombia	davidroman82	720	93	Colombia
RubenSelvaYMar	1900	94	Colombia	MechasCar	710	100	No ID
pachos1973	1500	99	Colombia	CortizJ_	1400	87	Colombia
OJOVENE	1500	75	Venezuela	Bonice71	1400	86	Colombia
				23ALZAT	1400	100	Colombia

Ten user accounts were classified as highly suspicious because they publish a disproportionate amount of content each week, ranging from 580 to 750 posts. Additionally, 75 percent of this content was retweeted from other users. These accounts are located in (5) Colombia, (2) Argentina, (1) Chile, and 2 are without origin.

Highly suspicious users							
Screen name	TPW	% R-RT	Loc	Screen name	TPW	% R-RT	Loc
Baldor2014	750	97	Colombia	MoeSzyslacks	640	98	No ID
AlmeidaCesar12	730	100	Colombia	AlidaDiazBrilla	640	97	Argentina
maasannons	680	92	Chile	IngEdalvarez	620	98	P. Colombia
ClauSilvero2	650	100	Argentina	LuisOrlandoS	580	96	Colombia
alejomoreno1972	650	78	Colombia				

On the other hand, a total of 25 profiles were classified as **suspicious users** when looking at the most recent posts about Colombia by Russian media outlets. These users are characterized by their large volume of posts since they exceed 14 posts a day or more than 98 posts per week. In this case, they range from 120 to 480 posts during the period of analysis. Their interactions are mainly retweets (more than 75 percent). These users are located in (17) Colombia, (4) Venezuela, (2) Mexico, and six accounts were without origin.

Suspicious users							
Screen name	TPW	% R-RT	Loc	Screen name	TPW	% R-RT	Loc
eccedeo	480	85	Colombia	Gustavo___Diaz	300	80	Venezuela
AndresE436	470	81	No ID	GiovanyMeza1	270	71	No ID
jonathanperozo2	450	86	Venezuela	koglomberg	240	82	Mexico
SurCristobal	430	84	P. Colombia	cely_marlene	210	87	Colombia
AER10Rosales	430	100	P. Venezuela	Juan_Pablo_dm1	180	82	P. Colombia
Jose_Yonier	420	100	Colombia	ROBINSON7s7	170	86	Colombia
David_Parallax	420	82	Mexico	Jaime_Hernan1	160	94	Colombia
eccedeo	390	80	Colombia	Reggaebqj	160	98	Colombia
julio140166	390	83	Venezuela	AndresRengMej	160	86	No ID
DonDieg37117385	370	72	No ID	oscartigre2019	160	99	No ID
MechasCar	370	100	Colombia	bee4nei	150	59	P. Colombia
Daniel_Bello28	370	96	P. Colombia	GONNEST	120	92	No ID
guaquitas	360	87	Colombia	OtroDiegoSoy	140	82	P. Colombia
lisanvilla	350	96	Colombia	iamDonJP	300	77	No ID
YmarZenon	300	100	P. Colombia				

Who are the possible members of Russia's cyber troops in the region and where are they located?

A total of 247 profiles were manually reviewed to identify the geographical location of audiences and users that amplify Russian media content about Colombia. These users are mainly located in Colombia, Venezuela, Argentina, Brazil, Mexico, Ecuador, Chile, and Central American countries. However, we were unable to track the location of about 80 users. Although large-scale participation of users in Colombia is to be expected, there is a significant number of users in the region who interact with content about Colombia.

Of the 247 accounts that disseminate Russian media content about Colombia, 64.1 percent display organic behavior and have low rates of publication. While 15.3 percent have characteristics of alleged cyborgs and 12.1 percent are highly suspicious users, these media outlets have a relatively high percentage of suspended users (4.4 percent). This data suggests that more than 35 percent of possible cyber troops members are semi-automated and inauthentically manipulate content.

Conclusions

Topics

- Colombia has been identified as the new target of Russian disinformation in the region due to its geographical proximity to Venezuela and Central America and the opportunity to destabilize its relationship with the U.S.[183] This narrative has been reinforced by the government of Ivan Duque, public opinion, and national media such as Revista Semana and RCN. Approximately 56,011 posts published on Twitter by the three aforementioned Russian media outlets in Spanish within the 13 months of study were reviewed. Findings suggest that the coverage on Colombia is somewhat high, considering that 1,135 posts about Colombia were posted in the same period. There was a significant increase in posts in November 2019 and September 2020, during which ActualidadRT exceeded 100 tweets per month. These peaks of activity coincide with social protests in the country and with posts by Actualidad RT about the shortcomings of Colombian democratic institutions, such as citizen repression and violation of human rights by the use of public force.

- Literature suggests that the ActualidadRT account in Spanish is less politicized than its English language counterpart).[184] However, ActualidadRT is the Russian media outlet with the most interactions, totaling 42,990 posts compared to RT Ultimo Hora which has 7,692 interactions, and Sputnik Mundo with 5,329 interactions during the period of study. Although all three outlets address the political and social situations of several Latin American countries such as Venezuela, Colombia, Chile, Mexico, and Argentina, it is evident that ActualidadRT stands out. When it comes to content about Colombia, two narratives have been identified: threats to democratic values, and humor and sarcasm when talking about social unrest and the pandemic.

- ActualidadRT, apart from being consistent with its posts about Colombia, has the support of YouTuber Inna Afinogenova (@inafinogenova) who has a channel called "Here it goes" where she conducts political analyses of the region. She has created a couple of videos on Colombia where she mentions the country's social and political landscape, commenting on the Colombian government's links to paramilitarism and the social protests of November 2019 and September 2020. These videos were published by ActualidadRT on Twitter and became the content with the most interaction, with more than one million retweets. These videos have been called conspiratorial by traditional Colombian media outlets such as Revista Semana. However, data suggest that Colombian audiences responded well to

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[183] Arias-Retana (2020); Barnett, K. & Kamp, A. (2019). Divergent Axes of Russian Influence in Colombia and Latin America. In *The Age of Disruption: How Power Shifts Create More Conflict* https://nsiteam.com/the-age-of-disruption-how-power-shifts-create-more-conflict/.

[184] Bush, D. (July 30, 2020). Two faces of Russian information operation disinformation to their sites in the Russia-aligned information space. Freeman Spogli Institute (FSI). https://fsi.stanford.edu/news/two-faces-russian-information-operations-coronavirus-coverage-spanish

Inna's content; it received more than 900 comments from users congratulating Inna for "telling the truth that others do not tell." This is a clear differentiator from traditional Colombian media, resulting in an increase of followers belonging to the so-called "new left."[185]

Covid-19

There is a clear distinction in topics prioritized by Russian media outlets when it comes to content on Colombia. Although ActualidadRT has a high number of posts about social protests and human rights violations, posts about COVID-19 were significantly lower (only 118 posts in 8 months) and were tainted with humor and sarcasm when reporting on cases of citizens who did not follow quarantine measures. One of ActualidadRT's most popular tweets only reached 826 retweets and 166 comments. In contrast, RT Última Hora focused on publishing content about the pandemic and government response, with 93 tweets during the same period. After reviewing content from this outlet along with that of TeleSur, we found only one publication that suggested disinformation -a post about the purchase of Russian pharmaceutical drug Avifavir, which had no major impact since it only reached 44 retweets and 7 comments on TeleSur and 680 retweets and 93 comments on RTU. Finally, Sputnik Mundo barely covers COVID-19, considering only 21 out of 129 posts over eight months were about the pandemic. However, Sputnik Mundo experienced abrupt growth in September 2020, growing from 2 or 10 posts to 108 in one month, due to its narrative suggesting threats to democracy by reporting on Colombia's foreign affairs with the United Nations, Organization of American States, the U.S. and Venezuela, as well as reporting on the deaths of social leaders, paramilitarism and human rights violations towards minorities and students.

User manipulation

The 247 possible members of Russian cyber troops disseminating content about Colombia are mainly located in two countries: Colombia (96) and Venezuela (21). In addition, a group of accounts was classified as alleged cyborgs (40), highly suspicious users (10), and suspicious users (25) for their disproportionate behavior, which in some cases reached up to 12,000 posts a week. This suggests that the number of profiles working to manipulate Twitter traffic around content about Colombia is low since the majority of users (118) who interacted with this content were classified as organic due to their low publication rates.

User coordination

Coordination between users is usually part of the disinformation process, which aims to strategically position content in online debate. After having observed the connections between 23,505 users and Russian media outlets, we concluded that there is little coordination between possible members of Russian cyber troops disseminating content about Colombia since we only found 17 users posting in parallel and simultaneously

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[185] Ter (2018).

sharing the tweets by Actualidad RT and Sputnik Mundo. These users were previously classified as highly suspicious and suspicious due to their disproportionate behavior.

Venezuela and Cuba

Country Strategy

Both countries want to improve the image of their governments and respective revolutions on the international stage, and thus eventually reduce the discrediting of communism by democratic nations. To achieve this, Cuba has actively participated in Colombia's peace process with the FARC and ELN, in addition to sending medical brigades to other countries in times of crisis. Its media has made gestures of political goodwill visible at the international level. Additionally, its media prioritizes the permanent condemnation of economic sanctions imposed by the U.S.

Venezuela has also used the same strategy. It participated in the Colombian peace process and uses its media system to highlight its interventions and point out the positive aspects of said events. However, this has been overshadowed by the differences in political ideology and personal friction between the incumbent presidents. Posts about Colombia have been less popular due to the constant discrediting of its political leaders and spotlight on social problems, human rights violations, and poor treatment of the Venezuelan migrant and refugee population.

Government Affiliated Media Outlets

	The Latin Press Agency (Prensa Latina) is the most emblematic communication outlet in Cuba. It was founded on April 17, 1959, by Jorge Ricardo Masetti and Rodolfo Walsh, who sought to spread anti-hegemonic journalism and end defamation of the revolution .[186] Twitter account details: - User: @PLprensalatina - Created: March 24, 2020 - Total tweets: 21,641 - Followers: 3,282

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[186] Arrosagaray E. (2004) Rodolfo Walsh in Cuba: Latin Press Agency, militia, rum, and cryptography. Buenos Aires, Catalogs.

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Link	PL Agencia Prensa Latina (@PLprensalatina) / Twitter
	The Granma Newspaper is the official communication outlet of the Cuban Communist Party. It was founded in 1965 and is protected by article 52 of the constitution, which prohibits the existence of private media (Carty & Terry, 1976).[187] In 2020, its Twitter account, in addition to its accounts on other social networks, was closed by the U.S. for violating sanction laws. However, they were restored by Google.[188] Twitter account details: - User: @Granma_Digital - Created: June 14, 2010 - Total tweets: 10,5481 - Followers: 21,7107
Link	Periódico Granma (@Granma_Digital) / Twitter
	Cubadebate is also part of the Cuban communist party media network. It was founded in 2005 to position and defend the Cuban political project on the international stage. This outlet has managed to create a space for citizen voices at the national level. (Ramírez Hernández & Salgueiro-Marques, 2019).[189] Twitter account details: - User: @cubadebatecu - Created: October 3, 2019 - Total tweets: 17,380 - Followers: 80,770
Link	Cubadebate (@cubadebatecu) / Twitter

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[187] Carty & Terry (1976).

[188] Juanes, W. (August 22, 2020) Google reactivates Diario Granma's account and all services on Youtube. Periodico Granma. http://www.granma.cu/mundo/2020-08-22/google-reestablece-cuenta-del-diario-granma-en-youtube-y-todos-los-demas-servicios-22-08-2020-08-08-45

[189] Ramírez Hernández & Salgueiro-Marques, (2019).

teleSUR TV ✔ 1.3M Tweets teleSUR TV ✔ @teleSURtv Con más de 40 corresponsales en el mundo, alzamos nuestra voz donde otros medios callan. teleSUR es la señal informativa de América Latina Translate bio 📍 Caracas 🔗 telesurtv.net 📅 Joined June 2009 330 Following 1.9M Followers	TeleSur was created on June 24, 2005. Its objective is to integrate news across Latin America by counteracting the supposedly biased information coming from Western powers and promoting the values of the Bolivarian revolution (Arcila, 2005).[190] This State media outlet seeks to develop its informative agenda, which consists of defining and disseminating the region's values (Carballal-Cano, 2009).[191] [192] [193] Twitter account details: - User: @cubadebatecu - Created: June 5, 2009 - Total tweets: 133,2861 - Followers: 1,982,990
Link	TeleSur TV (@TeleSurtv) / Twitter

What are the most published topics about Colombia?

CubaDebate	Periodico Granma	Prensa Latina	TeleSur

The word clouds above show that words such as "peace process," "Pablo Beltran," and "violence" stand out from the posts by Cuban media outlets Cubadebate, Prensa Latina and Granma. This suggests wide coverage of the peace agreement between the ELN and the Colombian government, in which Cuba played a central role in facilitating dialogue. This is consistent with the literature review, which addresses Cuba's role in the negotiations with the ELN as well as that with FARC. Words such as "massacre," "social leaders," and "violence" are used in Granma and Prensa Latina when referencing the assassination of civil society leaders and citizens during 2020, highlighting the

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[190] Arcila (2005).

[191] Carballal-Cano (2009).

[192] Suppo, H (2017) TeleSur: counter-hegemonic soft power? Rosario.

[193] Henkel, C. (2021) TeleSur, communication and chavismo: limits to a Latin America state communication project. Eudeba.

shortcomings of the Colombian government. TeleSur made a high number of posts related to Colombia, exceeding 2,000 tweets in the period of study. Posts include coverage of the murder of civil society leaders in Colombia and the constant violation of human rights. Venezuela is also a recurring topic. This does not align with findings from the literature review; content related to the Bolivarian revolution is not evident. The greatest inconsistency lies in that the literature did not mention Venezuelan media coverage of Colombia; the number of posts of this nature is much higher compared to that of the Cuban, Chinese and Russian media outlets.

What months had the highest number of Cuban and Venezuelan posts about Colombia?
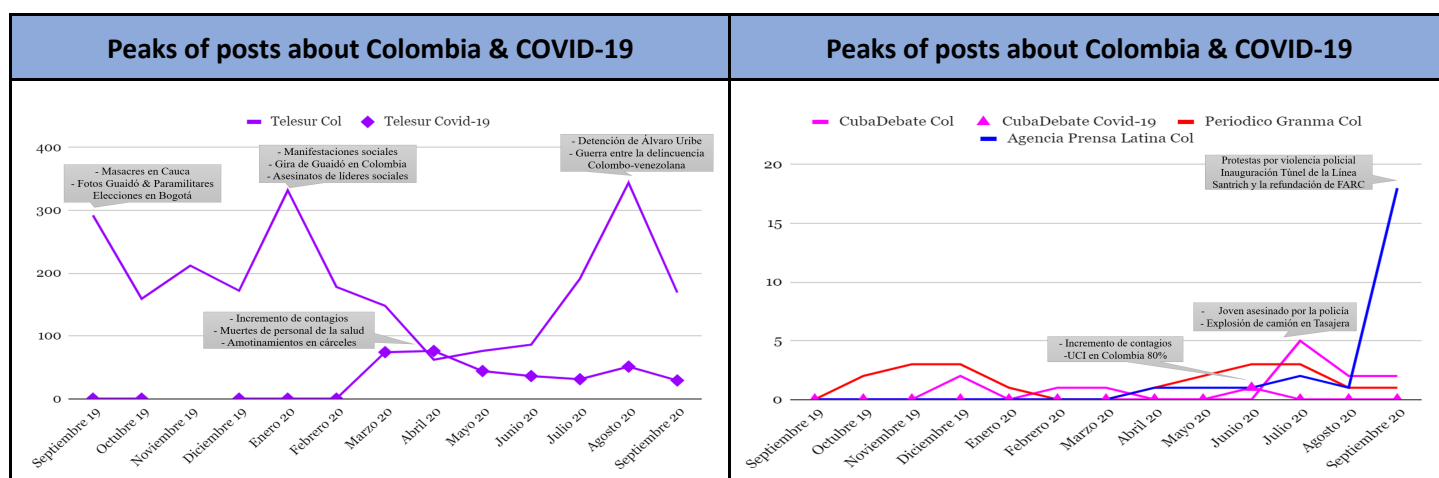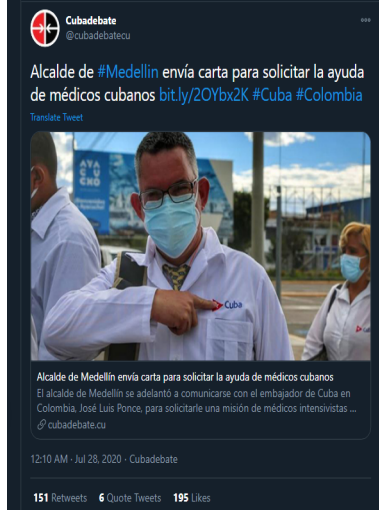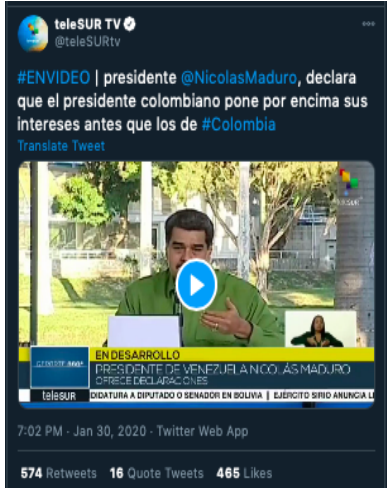
TelSur tweets mentioning Colombia exceeded 300 per month, especially in January and August 2020 when attention was directed to the murders of civilians, criticism of Ivan Duque's government by President Nicolas Maduro and the trial of former President Alvaro Uribe. In comparison, TeleSur barely covered the pandemic, with only 314 tweets over 8 months, compared to 2,775 tweets about Colombia overall. Nonetheless, TeleSur generated the most content about the pandemic without having a greater impact on audiences. Tweets were focused on the tensions and social problems emerging on the Colombian borders with Venezuela and Brazil, and criticizing Ivan Duque's handling of the humanitarian crisis.

Cuban media outlets Granma, Prensa Latina and CubaDebate have a completely different dynamic than TeleSur. Their publication rates are low and no higher than 5 posts about Colombia per month, except for Prensa Latina which reached 20 posts about Colombia in September 2020. During that month, topics included protests and police brutality towards citizens. Granma had two slight peaks: the first in November and December 2019, and the second in June and July 2020, during which it mentioned very specific issues. Diminishing interest in Colombia is evident. The first tweet was about the cancelation of Aviance flights to Havana, and the second was a statement from the Cuban government saying that the Colombian government invests more time and money in destabilizing Venezuela than in caring for its citizens because of its neoliberal policies. Finally, Cubadebate has the lowest number of posts about Colombia out of all the Cuban media outlets reviewed.

However, it experienced a slight peak in posts in December 2019 and July 2020. This variation is due to tweets about Medellin Mayor Daniel Quintero Calle's request for the help of Cuban doctors in managing the pandemic. The coverage of COVID-19 in Colombia is close to none since it was the only publication about this topic (this will be expanded on later in the report).

Which "case study" posts had the most retweets during peak months?

November 2019	July 2020	September 2020
Periódico Granma @Granma_Digital Avianca, aerolínea colombiana, era la única que volaba directamente entre San Salvador y La #Habana, pero recién anunció que a partir del próximo 15 de enero suspendería dicha ruta para evitar conflictos con el Gobierno de Estados Unidos bit.ly/2pTxPtK Translate Tweet 4:30 PM · Nov 25, 2019 · TweetDeck **37** Retweets **2** Quote Tweets **30** Likes	**Cubadebate** @cubadebatecu Alcalde de #Medellin envía carta para solicitar la ayuda de médicos cubanos bit.ly/2OYbx2K #Cuba #Colombia Translate Tweet Alcalde de Medellín envía carta para solicitar la ayuda de médicos cubanos El alcalde de Medellín se adelantó a comunicarse con el embajador de Cuba en Colombia, José Luis Ponce, para solicitarle una misión de médicos intensivistas ... cubadebate.cu 12:10 AM · Jul 28, 2020 · Cubadebate **151** Retweets **6** Quote Tweets **195** Likes	**PL Agencia Prensa Latina** @PLprensalatina #Colombia protesta contra brutalidad policial y masacres Más 👉 bit.ly/2FNCjtL Translate Tweet 6:00 PM · Sep 21, 2020 · TweetDeck **6** Retweets **3** Likes

January 2020	March 2020	April 2020
teleSUR TV @teleSURtv #ENVIDEO | presidente @NicolasMaduro, declara que el presidente colombiano pone por encima sus intereses antes que los del #Colombia Translate Tweet EN DESARROLLO PRESIDENTE DE VENEZUELA NICOLÁS MADURO OFRECE DECLARACIONES 7:02 PM · Jan 30, 2020 · Twitter Web App **574** Retweets **16** Quote Tweets **465** Likes	**teleSUR TV** @teleSURtv #Venezuela calificó como "un acto de irresponsabilidad grotesca" la decisión tomada por el presidente de #Colombia @IvanDuque de cerrar la frontera común para enfrentar la pandemia del coronavirus 2019 bit.ly/2U31DPG Translate Tweet 10:02 PM · Mar 14, 2020 · TweetDeck **273** Retweets **9** Quote Tweets **180** Likes	**teleSUR TV** @teleSURtv El estado venezolano de Táchira recibió un laboratorio de bionálisis para realizar la prueba que descarta el coronavirus Covid-19👉bit.ly/3e9YnLz El equipo servirá para realizar las pruebas a las personas que llegan de Colombia Translate Tweet 1:08 PM · Apr 12, 2020 · TweetDeck **559** Retweets **15** Quote Tweets **474** Likes

What do the user interactions of the most retweeted case studies look like?

This graphic represents users' interaction with tweets by TeleSur (purple), Cubadebate (green), Prensa Latina (gray), and Granma (blue). This web is made up of 5,118 vertices (the number of users who interacted with the posts selected) and 2,574 edges (the number of connections or interactions). The graphic shows how TeleSur has the majority of users who reproduce information, while Cubadebate, Granma and Prensa Latina have a smaller proportion of users (who also amplify messages of media affiliated with the Venezuelan and Cuban governments). The graphic also shows the existence of boundary spanners (users who interacted with two or more media outlets). This allows us to conclude that there is greater proximity between TeleSur and Granma, while gray and green are not in proximity. This scarce connection between the four media rules out the existence of any possible CIB.

Who are the users disseminating content created by Venezuelan and Cuban media outlets and where are they located?

The accounts with the higher number of interactions were manually reviewed. In total, 225 accounts were reviewed, of which 18 are classified as **alleged cyborgs** due to their disproportionate behavior. Their publication rates are very high-ranging from 730 to 15,000 posts weekly (TPW)- and they have a high percentage (exceeding 75 percent) of retweets (R-RT). These users are located mainly in the Americas: (7) Venezuela, (4) Colombia and (4) Cuba.

Of the 225 accounts reviewed, 48 were classified as suspicious users because they publish a disproportionate number of posts weekly, ranging from 99 to 504, and 75 percent of this content is retweets of content created by other users. These suspicious users are mainly located in (7) Venezuela, (6) Colombia, (14) Cuba.

Alleged cyborgs							
Screen name	**TPW**	**% R-RT**	**Loc**	**Screen name**	**TPW**	**% R-RT**	**Loc**
ArnulfoVanegas5	15000	100	Venezuela	AbrazoRebelde	1200	70	Venezuela
CmarcaFederal	2100	100	P. Colombia	mane523	1100	100	P. Colombia
Monyrica	1400	83	Colombia	Elbolocandanga	1000	100	Cuba
guver2008	1300	83	P. Venezuela	Diego99902702	790	100	Cuba
LuisAlf82940568	1300	50	P. Colombia	ErnestoAriasRo1	790	100	Cuba
MediaGuerrillaV	1300	77	Venezuela	Harkonen	740	79	No ID
VirgilioPonce	1200	99	Venezuela	LisandroAlgterr	740	71	P. Venezuela
remv73	1200	100	Venezuela	NunezBela	730	91	Cuba
Suspicious Users							
emiliolagos1	504	59	Colombia	jpaischanfrau1	200	100	Ecuador
Maria_E_Medina	501	64	Venezuela	exaguerrido	200	83	Colombia
mamas_fritas	490	87	P. Colombia	chirikayen29	200	96	P. Venezuela
saura_victoria	4450	99	No ID	feucho2010	200	100	Venezuela
MonchoRiva	430	99	Ecuador	jpaischanfrau1	200	100	Ecuador
oscaredondo	410	89	Cuba	maldanav2012	190	61	Cuba
ESanchezcub	340	87	Cuba	foto_abreu	190	86	No ID
LuisMachn1	340	98	Cuba	colombiafree1	180	51	Australia
frenadeso	330	63	P. Panama	Gilbert86661070	180	96	P. Cuba
alexanderlrvr	320	96	Venezuela	valdes_eros	180	100	P. Cuba
Ricardo66809310	300	70	Cuba	DaniloM46041162	180	87	Cuba
jmab1982	290	92	P. Colombia	abbymamaly	170	95	Venezuela
alejo_maykel	320	96	Venezuela	AlejoBrunoMejia	170	96	Cuba
Ricardo66809310	300	70	Cuba	CarlosL28684663	160	100	Cuba
jmab1982	290	92	P. Colombia	NestorA56139528	160	95	Cuba

alejo_maykel	290	100	P. Cuba	Keilis98	160	93	Cuba
FriolMaribel	290	100	No ID	luisrey88	160	99	Mexico
NKo50	280	91	Mexico	sica2021	140	64	Venezuela
perrogente	260	96	P. Venezuela	robertoblanco14	130	59	No ID
Zaucor	240	96	Mexico	VigoaDe	130	93	No ID
Lufer2013	220	57	Colombia	GladysCeciliaH3	130	92	Cuba
AiSawaka	210	100	P. Venezuela	JulianP44626255	120	83	No ID
mccr036	210	86	Venezuela	Margaruz	100	92	Venezuela
npmedellin	210	96	P. Colombia	danielopezjah	100	99	P. Colombia

Who are the possible members of Venezuelan and Cuban cyber troops in the region and where are they located?

225 accounts were manually reviewed and we identified the country of origin of most users. This allowed us to conclude that the audiences of the selected tweets are located mainly in Venezuela and Cuba, which makes sense, considering the media belong to these countries. However, since they are tweets in which Colombia is mentioned, we would have expected Colombian users to be more active.
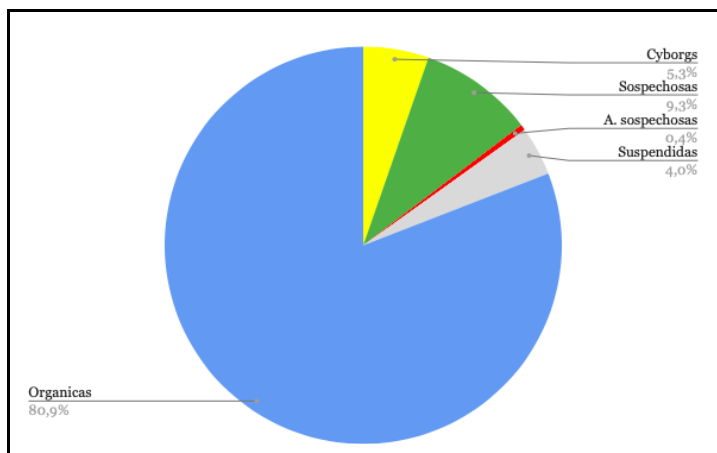
Of the 225 accounts disseminating Venezuelan and Cuban media content, 80.9 percent display organic behavior with low publication rates. While 5.3 percent present characteristics of alleged cyborgs, 9.3 percent exhibit suspicious behavior. This suggests that although the majority of users show normal characteristics, there is still a proportion of them with semi-automatic behavior that leads to inauthentic manipulation.

Conclusions

Topics

- The three Cuban media outlets analyzed display similar trends in their posts about Colombia. Although they are insistent on showing Cuba's participation in Colombia's peace processes with both the FARC and the ELN, they also point out social problems in Colombia such as the murder of civil society leaders, protests and human rights violations through the use of public force. Granma publishes more tweets on social problems (which receive more interactions) and demonstrates more criticism of the Colombian government and its neoliberal policies. Regardless, the number of posts is significantly low, since in some cases it does not exceed 10 tweets. The most popular tweet during the 13 months of study does not exceed 200 retweets, and the content of this tweet does not appear in local Colombian media. Finally, there are three topics mentioned in posts by Cuban media outlets that remain consistent: 1. condemning the economic sanctions imposed by the U.S.; 2. highlighting the positive aspects of the revolution such as education and medical brigades and 3. commemorating the milestones of the revolution.

- TeleSur's posts about Colombia are characterized by critical and consistent messaging, totaling 2,775 tweets during the 13 months. Its posts focus on social and border problems, corruption, and national security issues such as the assassination of civil society leaders, protests, migration, opposition political leaders and human rights violations. Despite addressing recurring topics with a large number of posts and having a large number of followers, this information had a limited impact in Colombia. This is evident both in user interactions (that do not exceed 600 retweets and 20 comments) and in the scarcity of mentions by Colombian media. Finally, TeleSur provided minimal coverage of the pandemic in comparison to its overall coverage of Colombia. TeleSur only posted 314 tweets about the pandemic in Colombia over eight months. However, TeleSur produced more content about the pandemic than the other Venezuelan media outlets, yet did not have a greater impact on audiences. These tweets focused on criticizing Colombia's border relations with Venezuela and Brazil, as well as Ivan Duque's mismanagement of the humanitarian crises that have emerged from social unrest.

COVID-19

All three Cuban media outlets did not prioritize content about the pandemic in Colombia. Only one case stands out: that of Medellin Mayor Daniel Quintero Calle, who wrote a letter to the Cuban ambassador to Colombia requesting the aid of medical brigades to treat patients in critical condition. Cubadebate and TeleSur reported on this news, as did Colombian media outlet Revista Semana. However, the user interactions with these posts and their impact were significantly low.

User Coordination

Coordination between users to position content in the online debate is usually part of the disinformation process. After reviewing the connections of 5,118 users to Venezuelan and Cuban media outlets, a low level of coordination between possible members of cyber troops was identified. Only 19 users were found to be amplifying TeleSur, Cubadebate, Prensa Latin, and Granma content. These users are classified as suspicious due to their disproportionate behavior.

User manipulation

After analyzing the 225 accounts of possible members of the Venezuelan and Cuban cyber troops disseminating content about Colombia, we found that the users are located mainly in Cuba (67), Venezuela (54) and Colombia (15). As a result of this analysis, we classified a group of accounts as alleged cyborgs (18) and suspicious users (48) who have semiautomatic and disproportionate behavior and produce 15,000 weekly posts. Likewise, we found 182 organic users, who make up the majority of accounts that reproduce content and have low publication rates. This suggests that manipulation of traffic around content about Colombia is limited because the number of organic users is significantly higher than that of suspicious users.

COLOMBIA COVERAGE OVERALL

What do the interactions of media users covering Colombia look like?

A graph was made to represent the 50,854 users linked to all of the media outlets analyzed in this study. A large number of users reproduced RT (purple) and TeleSur (green) content. This data infers that these outlets have a greater number of cyber troops. The connection between RT and Telsur users is broad and the graphic suggests that there is a possible CIB. There is a much smaller volume of users linked to Chinese and Cuban media outlets and little connection between these users.

Who are the users interacting with and disseminating content about Colombia and where are they located?

A review was conducted of 174 accounts, of which 28 are classified as **alleged cyborgs** because of their disproportionate behavior, high publication rates reaching 730 to 3,800 weekly posts (TPW), and a high percentage (more than 75 percent) of retweets (R-RT). These users are located in (4) Colombia, (12) Venezuela, (2) Ecuador, and (1) Argentina.

Alleged cyborgs							
Screen name	TPW	% R-RT	Loc	Screen name	TPW	% R-RT	Loc
sucresabanero	3800	100	No ID	Virgilio Ponce	1200	99	France
a_subversivo	2600	100	Venezuela	mane523	1200	96	No ID
alitapaz	2000	96	Argentina	PRC2021	1100	94	P. Ecuador

Screen name	TPW	% R-RT	Loc	Screen name	TPW	% R-RT	Loc
hectorrCagua	1900	36	Venezuela	JuanBFMartinez	990	100	Cuba
OJOVENE	1600	66	Venezuela	DANCARXXI	970	100	Venezuela
machadodz	1500	92	Venezuela	gustavocrespo73	960	96	Uruguay
chamo_arias	1400	97	Ecuador	Libertaria120	920	91	Spain
PrometeoNews	1400	99	Venezuela	Edgartm12	800	100	Colombia
MediaGuerrillaV	1300	77	Venezuela	rayleon1515	770	81	Colombia
MIguelc791	1300	99	P. Venezuela	Ivanelov	770	100	Venezuela
guver2008	1300	83	P. Venezuela	jcmateus86	760	97	P. Colombia
GriseldaMafalda	1200	75	Argentina	sanchezbrujito	730	69	Venezuela
elchamocandanga	1200	93	Venezuela	NunezBela	730	91	Cuba
mgamba58	1200	100	Colombia				

Thirteen users were classified as **highly suspicious** due to their high publication rate ranging from 99 to 504 tweets per week, of which 75 percent are retweets. The majority of these users are located in (7) Venezuela, (6) Colombia and (2) Ecuador.

A total of 48 users were considered **suspicious** for their high publication rates ranging from 100 to 500 weekly posts. These users are mainly located in (15) Venezuela, (7) Colombia, (1) Mexico, (1) Argentina, and (1) Nicaragua.

Highly suspicious users							
Screen name	TPW	% R-RT	Loc	Screen name	TPW	% R-RT	Loc
ethienyren	690	93	P. Colombia	mundoennoticias	620	95	No ID
observadortwits	690	93	P. Colombia	jjcguz	560	89	P. Colombia
roldandpv	680	100	P. Colombia	Beacandanga	530	65	P. Venezuela
ClauSilvero2	650	100	Argentina	Cantante777	520	100	Ecuador
EfrainCamacho13	620	63	No ID	samario	520	98	No ID
carlitosecheve	620	100	P. Colombia	favubus	504	100	Ecuador
Suspicious users							
elpedroski	500	100	Venezuela	luismoralejafin	230	99	Venezuela

jgonzaca	480	98	Venezuela	librenqn	210	81	Argentina
asoguardas	460	98	No ID	chirikayen29	200	96	P. Venezuela
diogenesherdez1	430	42	No ID	iangulochacon	200	71	P. Venezuela
fabfasionista8	410	96	No ID	palosj	200	98	No ID
Kaleno87	410	95	Nicaragua	jchaconroa	180	98	No ID
mariju929	400	100	No ID	CrissRiosM	180	100	Colombia
diegobriceno77	380	100	P. Colombia	KIKEpelado1	180	100	No ID
marlonr2002	360	100	P. Venezuela	Lorena38827676	180	96	No ID
OcaesarD	350	82	P. Colombia	ocixneros	170	100	Mexico
comandanteful	340	97	Venezuela	oscartigre2019	160	99	No ID
Yanesky	320	100	Venezuela	ColmGuillermina	160	100	Venezuela
CeciliaConcilio	320	98	Venezuela	NestorA56139528	160	95	Cuba
CrazyHourse	320	98	Venezuela	1ffe0c2d05b44ff	150	100	No ID
javidelro	310	97	P. Colombia	lenmaryv	140	92	Venezuela
edferobayo	300	100	P. Colombia	GARCÍAJej	140	99	Venezuela
Gustavo__Diaz	300	80	Venezuela	FlorDePitaya	130	94	P. Mexico
ddavidperez22	250	92	Colombia	MariBelandria1	130	100	Venezuela
keyanavi	250	76	No ID	JosLuis25848363	120	68	No ID
MiriamH31	240	98	No ID	geolize	100	98	Venezuela

Who are the possible members of cyber troops reproducing content about Colombia and where are they located?
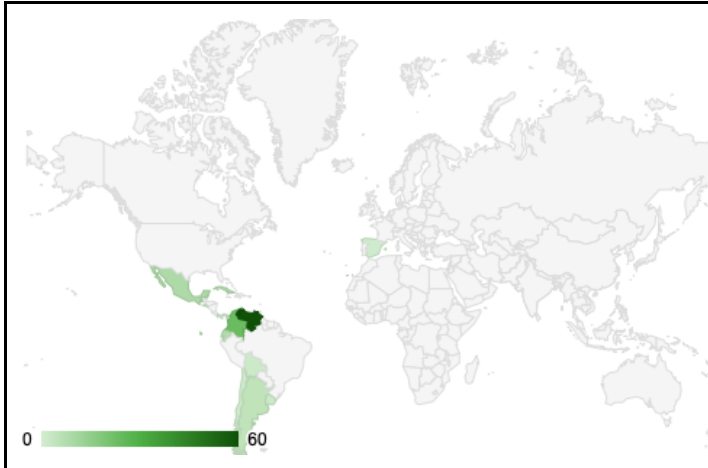
The majority of these users are located in Latin America, mainly in Venezuela, followed by Colombia, and lastly other countries in the region such as Mexico, Cuba, Bolivia, and Argentina.
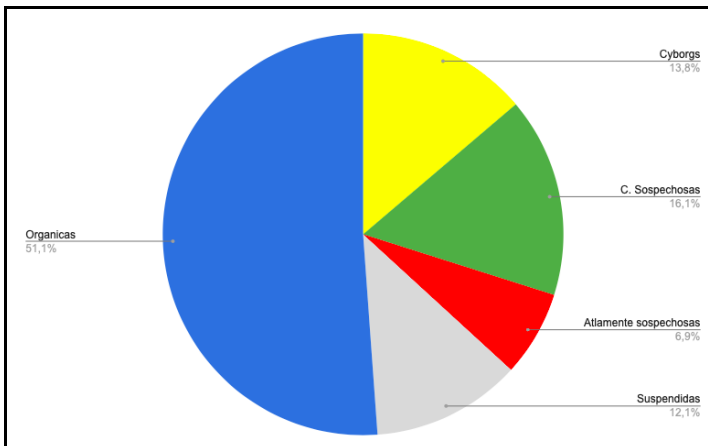
Of the 174 accounts that were manually reviewed, 51.1 percent appear to be organic, which is high compared to the 12.8 percent classified as alleged cyborgs, 16.1 percent as suspicious users and 6.9 percent as highly suspicious users. Similar to the cases of China, Venezuela, Cuba, and Russia, there is a significant percentage of normal accounts, yet a percentage of disproportionate users was identified when later analyzing user interactions with the media.

General Conclusions Colombia

User coordination

Coordination between users to position content in the online debate is usually part of the disinformation process. Based on the selected case studies, a general data visualization of content mentioning Colombia was developed to observe the behavior of 50,854 users. A total of 174 accounts were manually reviewed and identified as boundary spanners, or users who interacted with the content of more than two media outlets. There is also notable coordination between users linked to Actualidad RT and TeleSur, which have more than

745 users in common. This contrasts with the rest of the media outlets which have a small number of boundary spanners and suggest limited coordination between users in the dissemination of information about Colombia.

User manipulation

Of the 174 users identified as boundary spanners and possible members of cyber troops, the majority are located in two countries: Colombia (24) and Venezuela (60). An additional group of users was classified as alleged cyborgs (28), highly suspicious users (13) and suspicious users (48) characterized by disproportionate behavior in their weekly posts. Similarly, a total of 89 users were identified as having organic behavior due to low publication rates (under 98 tweets per week). This suggests there is a minimal level of manipulation of Twitter traffic on content addressing Colombia since the majority of profiles that disseminate information are organic.

COVID-19 & COLOMBIA

What do the user interactions with media covering COVID-19 in Colombia look like?

This graphic represents all of the user interactions with media outlets generating content on COVID-19 in Colombia, yielding a total of 16,171 users. We found that there is a large number of users who reproduce content from three media: Actualidad RT (green), RT Ultima Hora (dark orange) and TeleSur (purple). This visualization suggests the possible existence of coordination between users. The connections between these users are broad since they have many accounts in common that points to possible coordination.

CGNT (yellow), Xinhua (blue) and Cubadebate (light orange) have a much smaller volume of users in comparison. The number of connections between users is low and reflects little proximity between users and these media outlets.

A total of 357 accounts that interacted with coverage of the pandemic in Colombia were manually reviewed. We classified 57 users as **alleged cyborgs** because of their disproportionate behavior; their publication rates are very high, in this case, they range from 700 to 9,700 posts a week (TPW) and have a high percentage of retweets (R-RT). The majority of these users are located across (24) Venezuela, (16) Colombia, (2) Ecuador, (2) the U.S., (2) Peru, and (1) Mexico. It was not possible to identify the origin of the remaining users.

Alleged cyborgs							
Screen name	TPW	% R-RT	Loc	Screen name	TPW	% R-RT	Loc
JairoGarcíaXXI	9700	96	P. Colombia	nellytaylor1414	1200	100	No ID
cesar_García_nt	8000	99	Colombia	espe_maria	1200	96	Colombia
PrometeoNews	8000	95	Venezuela	SergioGPerezC	1000	100	Guatemala
MarielaAlvear	4500	83	P. Colombia	ramedugonzalez	1000	98	Ecuador
silvrib	3200	100	Brazil	Cesar_Balac	1000	96	Peru
FROILANZ	3200	100	Colombia	Je_Albearci	990	990	P. Colombia
ManuelCortazar7	2600	100	P. Colombia	shirley2096	980	89	P. Colombia
dragonnegro2395	2200	74	No ID	DANCARXXI	970	100	Venezuela
yasmi70	2200	96	P. Venezuela	251063andy	920	100	Venezuela
aagramirez	2100	100	Colombia	enferguilliani	910	99	Venezuela
Nueza	2000	88	Peru	mariyu64	910	96	Venezuela
RigouLopez	1900	100	No ID	Richardalexf	880	87	P. Venezuela
BritoSjbv23	1900	100	P. Venezuela	tele_sig	870	83	P. Colombia
SenorCaicedo	1900	77	Colombia	AlRomanMppef	830	91	P. Venezuela
Moro_kuni	1800	89	Colombia	licmore	810	99	Venezuela
Shaktive	1800	96	Venezuela	limarcas	790	100	Venezuela
rauamu	1600	100	P. Venezuela	García_Edwar_S	790	91	Venezuela
fransuarezq	1500	100	P. Peru	PlataApaza	780	100	Bolivia
SARGENTOCASTROV	1500	100	Colombia	hoswaldosg	770	100	Venezuela
OJOVENE	1500	75	P. Venezuela	asbaeza65	770	84	No ID
VirgilioPonce	1400	99	France	TParaco	750	99	No ID
alexmosquera50	1300	100	Ecuador	margaritalemus	740	99	Venezuela
remv73	1300	98	Venezuela	23dwn	740	82	P. Colombia
carlosochanla88	1300	100	Mexico	oliveros561	710	98	Venezuela
FiguerasAlfredo	1300	68	Argentina	aguaycuenca	710	100	Venezuela

porboyaca	1200	86	Colombia	elchamocandanga	710	93	Venezuela
Orlando14285774	1200	90	P. Venezuela	Rodribaggio10	700	92	Ecuador
carlosochanla88	1200	98	P. Venezuela				
JohnnyAS2018	1200	96	El Salvador				
nellytaylor1414	1200	100	No ID				

Seventeen accounts were classified as **highly suspicious users** given their high publication rate ranging from 95 to 640 posts per week, with 75 percent being retweeted. The majority of these users are located in (7) Venezuela, (6) Colombia and (2) Ecuador.

Highly suspicious users							
Screen name	TPW	% R-RT	Loc	Screen name	TPW	% R-RT	Loc
linares_roy	640	100	Venezuela	Omanoe30	530	92	No ID
jupamata16	620	100	Venezuela	GUNNER1337	530	90	No ID
zarojeha	580	94	No ID	19Astaroht	520	98	Colombia
bichuelo	570	91	P. Colombia	dianarocio171	510	96	Colombia
SanchezElith	560	100	Venezuela	samuelricardol	510	98	Colombia
HectorPernia6	560	100	Venezuela	sonyjwgz	510	100	Ecuador
Granchi4	559	91	Venezuela	Maria_E_Medina	510	75	Venezuela
HHMARTINL	540	98	Colombia	rkastrejon	505	95	Mexico
jorgeandresjohn	540	100	Colombia				

Lastly, 71 accounts were classified as **suspicious users** because they publish a disproportionate number of content weekly, ranging from 110 to 490 posts per week, with 75 percent of posts being retweets of content created by other users). These users are primarily located in (32) Venezuela, (10) Colombia and (5) Ecuador.

Screen name	TPW	% R-RT	Loc	Screen name	TPW	% R-RT	Loc
miguelsojo	490	85	Venezuela	vra39ceve	270	91	Venezuela
danidanilo2901	480	96	Colombia	AER10Rosales	270	100	Venezuela

IngEdalvarez	480	99	No ID	v23m	260	100	Venezuela
nabautu1	480	99	Venezuela	normamoralesg	260	100	No ID
Karimg40	470	94	Venezuela	gonzocianca	250	99	Ecuador
bervisleon17	470	100	Venezuela	sfrichy	250	100	Ecuador
jcheocandanga	470	100	Venezuela	GoVladymir	250	100	P. Colombia
jorgeenquintero	460	100	No ID	grafismor99	250	99	Venezuela
gattillos_11	460	97	Ecuador	MorantesAbigail	230	100	P. Venezuela
info24wil	460	98	Colombia	Fortuna50761529	220	100	No ID
Frankli06815670	450	96	Ecuador	feucho2010	220	100	Venezuela
saura_victoria	450	95	P. Cuba	juangui0878	220	98	No ID
lakrtuchra	440	91	Venezuela	alexanderjpm72	210	92	Venezuela
AlmeidaCesar12	420	100	Colombia	Andresromerou12	210	81	Colombia
xjuantw	400	100	No ID	jacintodavila	200	97	Venezuela
jcpirela_vp	400	100	No ID	ferchorivera72	190	99	No ID
lopezju55	400	100	P.Peru	joosorvacassill	190	83	Colombia
bedoyarendon	390	96	Panamá	LUisPepe2791	180	100	Peru
agarcos	380	98	Ecuador	EdgarBlanco_VE	180	98	Venezuela
JMiguelRomero3	370	98	P. Venezuela	LaRocaE77	180	88	No ID
INFORMACION2JGP	370	98	No ID	asdfg_o	170	99	Colombia
marlonr2002	360	100	P. Venezuela	YmarZenon	170	100	Venezuela
AlidaDiazBrilla	360	97	P. Venezuela	WonderRola	160	82	P. Colombia
custodiocr	350	100	Colombia	Danimoon_LC	160	100	No ID
juandagonza1105	350	100	P. Colombia	ColmGuillermina	160	100	Venezuela
Jxenize	330	98	Argentina	Aquilestp	150	81	Venezuela
Aquiles2801	310	99	Venezuela	LuisMorilloVEN	150	89	Venezuela
EdnewmanNewman	300	84	Cuba	CitronecJose	140	99	Venezuela
Energyambiente	290	98	P. Colombia	lourdes_cris	140	100	Venezuela

conescad	290	84	Peru	AmoAVzlaDije	140	75	Venezuela
UnCabimenseMas	289	76	Venezuela	TaverasAndres	140	91	No ID
lirapsuv	280	100	Venezuela	CarlosUgrm	140	75	Venezuela
Aa11ddaa	280	100	P. Venezuela	AztileyZaid	130	100	Venezuela
YohanGonzalez16	280	100	Venezuela	Nallbekr	120	98	P. Colombia
degravesalmarza	280	100	Venezuela	jvirvar	110	100	Venezuela
				Marafernanda41	110	98	Ecuador

Who are the possible members of cyber troops reproducing content about COVID-19 in Colombia and where are they located?
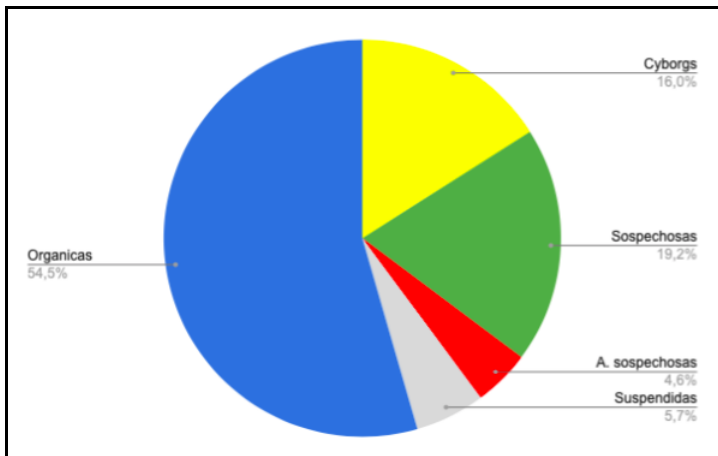
Of the 357 users reviewed, 54.5 percent turned out to be organic accounts. An additional 16 percent were identified as cyborgs, 19.2 percent as suspicious and 4.6 percent as highly suspicious, all due to their disproportionate publication rate. This allows us to infer that, within the analysis of select content and interactions, there are semi-automated users.
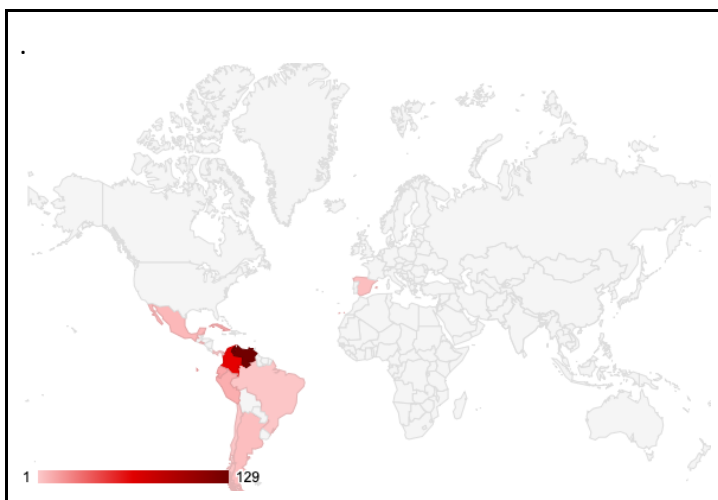
Audiences interacting with posts about COVID-19 in Colombia are concentrated in Venezuela and Colombia. Even though the posts were created by Chinese, Russian, Cuban, and Venezuelan media outlets, the main audience is in Venezuela. We also see some participation from other audiences from countries in the region such as Mexico, Peru, Ecuador, Cuba, Argentina, Brazil, and countries in Europe such as Spain

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COVID-19 & Disinformation - Colombia and the purchase of the Russian pharmaceutical drug Avifavir

On July 14, 2020, TeleSur and RT Ultima Hora suggested that Colombia, Peru and Brazil were going to buy the Russian pharmaceutical drug Avifavir to combat COVID-19 symptoms. This assumption was made based on a statement by Kiril Dmitriyev, director of the Russia Direct Investment Fund (Rdif), and supported by news articles posted on their respective websites. Although neither of these two posts had a greater reach (TeleSur had 44 retweets and seven comments, and RTU had 680 retweets and 93 comments), Revista Semana reacted by posting a publication. Although it only received 17 retweets and 3 comments, Revista Semana also posted two contradictory news stories: one stating that Colombia will by Avifavir; the other denying this based on an official statement from Colombia's Ministry of Health.

teleSUR TV @teleSURtv	**teleSURtv.net** Nota	**Revista Semana** @RevistaSemana
#México, #Brasil, #Colombia y #Perú han comprado ya el antiviral #Avifavir, medicamento recién sacado al mercado por #Rusia	NOTICIAS VIDEOS MULTIMEDIA OPINIÓN BLOGS PROGRAMAS EMPLEOS LATINOAMÉRICA Y EL CARIBE MUNDO DEPORTES CULTURA TECNOLOGÍA	El director del Rdif y quien participó en el desarrollo del fármaco Avifavir informó que un gran número de países, entre ellos Colombia, Perú, México y Brasil, han adquirido este medicamento ruso que combate al coronavirus.
Translate Tweet	Ad closed by Google	Translate Tweet
	Noticias > Latinoamérica y el Caribe **Países latinoamericanos compran fármaco ruso contra la Covid-19**	Avifavir: Rusia dice que Colombia le comprará fármaco para ... Sin embargo, el Ministerio de Salud de Colombia y el Invima niegan que se piense comprar dicho medicamento. semana.com
Países latinoamericanos compran fármaco ruso contra la Covid-19 México, Colombia, Perú y Brasil compraron el Avifavir, medicamento contra la Covid-19, afirmaron sus fabricante rusos. telesurtv.net	A falta de una vacuna específica contra la Covid-19, los antivirales resultan la mejor opción terapéutica para la enfermedad.	Foto: EFE	
3:52 PM · Jul 14, 2020 · TweetDeck	Publicado 14 julio 2020	12:00 PM · Jul 14, 2020 · TweetDeck
44 Retweets 7 Quote Tweets 56 Likes		17 Retweets 3 Quote Tweets 17 Likes
Link to tweet: TeleSur TV on Twitter: "#México, #Brasil, #Colombia y #Perú han comprado ya el antiviral #Avifavir, medicamento recién sacado al mercado por #Rusia https://t.co/XdgtHEvjxJ" / Twitter Link to news article: https://www.TeleSurtv.net/news/mexico-colombia-peru-brasil-compran-medicamento-ruso-20200714-0004.html		Link to tweet: https://twitter.com/RevistaSemana/status/1283083840055939072

Link to tweet: RT Última Hora on Twitter: "ÚLTIMA HORA: México, Colombia, Perú y Brasil, entre los países que compran el fármaco ruso contra el COVID-19 Avifavir https://t.co/LXC4e4E29G https://t.co/j2frOQADUF" / Twitter

Link to news article: https://actualidad.rt.com/actualidad/359847-mexico-colombia-peru-brasil-comprar-farmaco-covid19

Link to news article:
https://www.semana.com/nacion/articulo/avifavir-colombia-compra-farmaco-ruso-para-el-coronavirus--noticias-hoy/686414

Link to news article:
https://www.semana.com/pais/articulo/coronavirus-avifavir-en-colombia-para-tratar-COVID-19/292546/

COVID-19 - Colombia and Cuban medical brigades

On July 15, 2020, the mayor of Medellín Daniel Quintero Calle sent a letter to the Cuban ambassador requesting the dispatch of a medical brigade to treat patients in critical condition due to the COVID-19 pandemic. On July 26, the letter was leaked in Cuban national media (it is unknown who leaked the letter and caused a reaction from certain political leaders and civil society sectors. This is considered a case of misinformation and the only publication by Cuban media about COVID-19 in Colombia. It is worth noting that the posts by CubaDebate and TeleSur on Twitter were not well received (they only had 152 and 32 retweets, respectively). Neither was the publication by Revista Semana, which reached a maximum of 62 retweets of the post from director Vicky Davila and 13 retweets of journalist Andrea Nieto's post, although it was one of the only national media outlets that covered this issue in breaking news. In comparison, the responses to this letter by political figures such as María Fernanda Cabal and Álvaro Uribe on Twitter received high levels of interaction (surpassing 6,000 comments and 9 retweets), most likely because they opposed the mayor's request by suggesting espionage and labor exploitation.

Cubadebate @cubadebatecu	**teleSUR TV** @teleSURtv	**Revista Semana** @RevistaSemana
Alcalde de #Medellin envía carta para solicitar la ayuda de médicos cubanos bit.ly/2OYbx2K #Cuba #Colombia	Alcalde de Medellín en #Colombia, Daniel Quintero, solicitó la ayuda del personal médico cubano para combatir el virus de la Covid-19 en esa ciudad	¿Se necesitan médicos cubanos en Colombia para controlar la pandemia del coronavirus? La propuesta del alcalde de Medellín, Daniel Quintero, pasa por #ElControl con @MAndreaNieto. #SemanaNoticias bit.ly/331pTHQ
Alcalde de Medellín envía carta para solicitar la ayuda de médicos cubanos. El alcalde de Medellín se adelantó a comunicarse con el embajador de Cuba en Colombia, José Luis Ponce, para solicitarle una misión de médicos intensivistas ... cubadebate.cu	Alcalde colombiano solicita ayuda a médicos cubanos para combatir la Covid-1... El alcalde de Medellín instó al Ejecutivo colombiano a no priorizar intereses políticos por encima de la vida. telesurtv.net	6:58 · 8.7K views
12:10 AM · Jul 28, 2020 · Cubadebate	7:57 PM · Jul 27, 2020 · Twitter Web App	5:42 PM · Jul 27, 2020 · Twitter Ads
151 Retweets 6 Quote Tweets 195 Likes	32 Retweets 2 Quote Tweets 40 Likes	13 Retweets 2 Quote Tweets 37 Likes
https://mobile.twitter.com/cubadebatecu/status/1287978622310125568	https://mobile.twitter.com/TeleSurtv/status/1287914964188041218	https://twitter.com/RevistaSemana/status/1287881183045521409
Daniel Quintero Calle @QuinteroCalle · Jul 26, 2020 No hemos entendido bien el mensaje del Coronavirus. Más allá de las fronteras, razas e ideologías, nos recordó que como humanos nos necesitamos todos. A USA y UK le pedimos vacunas, a Emiratos pruebas, a Cuba, España personal. La vida debe de estar por encima de la política. **María Fernanda Cabal** @MariaFdaCabal · Jul 26, 2020 El alcalde @QuinteroCalle ofrece trabajo y seguridad a médicos cubanos para atender el pico de la pandemia en Medellín, desechando los médicos locales, que además tienen mejor preparación. ¡Inaudito! Así se gasta la plata de los contribuyentes. #Pinturita Alcaldía de Medellín De antemano agradecemos las gestiones que su despacho, diligentemente pueda adelantar para cumplir con este propósito. Atentamente, 5.2K 6.1K 24.7K	**Vicky Dávila** @VickyDavilaH El alcalde de Medellín Daniel Quintero le pido a Cuba ayuda con personal médico (cubano) para combatir el coronavirus en su ciudad. ¿Mala idea o buena idea?, ¿por qué? 7:24 PM · Jul 26, 2020 · Twitter for iPhone 62 Retweets 71 Quote Tweets 431 Likes	p **Álvaro Uribe Vélez** @AlvaroUribeVel No a los médicos cubanos: El cuerpo médico de Medellín es de excelencia; Durante estos 4 meses se debería haber avanzado en entrenar al Talento Humano en manejo de UCIS; Cuba explota a los médicos como una "trata de blancas"; Así empezó la toma de Venezuela. 9:45 AM · Jul 26, 2020 · Twitter for iPhone 7,804 Retweets 1,694 Quote Tweets 15.6K Likes
https://twitter.com/quinterocalle/status/1287403902464294912?lang=en	https://twitter.com/VickyDavilaH/status/1287544376458194944	https://twitter.com/AlvaroUribeVel/status/1287398600553750528

Conclusions on content about COVID-19 in Colombia

User coordination

A visualization of tweets COVID-19 in Colombia was developed to observe the behavior of 16,171 users. Of these total users, 357 were identified as boundary spanners or users who interacted with the content of more than two media outlets. As a result, the

coordination between users interacting with ActualidadRT, RT, Última Hora, and TeleSur was noted. These outlets have more than 745 users in common, as opposed to the remaining outlets that have a significantly lower number of boundary spanners between them. This implies limited coordination between users interacting with all of the different media outlets.

User manipulation

These 357 users identified as boundary spanners are possible members of cyber troops located mainly in two countries: Venezuela (129) and Colombia (58). In addition, 57 users were classified as alleged cyborgs, 17 as highly suspicious, and 71 as suspicious, due to the disproportionate behavior in their weekly posts. Similarly, a total of 189 users were identified as having organic behavior due to their low publication rates, (lower than 98 tweets per week). Therefore, there is evidence of a minimal manipulation of Twitter traffic on the content about Colombia, since the majority of accounts that disseminate the information are organic users.

GENERAL CONCLUSIONS

Who, how, when, where, through what means, and in what way do they spread disinformation, misinformation or propaganda in their respective countries?

- China: 184 accounts spread posts created by Chinese media outlets, including alleged cyborgs (18) mainly located in Venezuela, Argentina, Colombia, and Uruguay and highly suspicious users (3) located in Venezuela (2) and Mexico (1). The Chinese media outlets reviewed experienced peaks in posts during November 2019, December 2019 and May 2020.

- Russia: 247 accounts propagated information created by Russian media outlets, including alleged cyborgs (40) and highly suspicious users (10) mainly located in Colombia. The Russian media outlets that were analyzed experienced peaks in posts during September 2019, October 2019, November 2019, and September 2020.

- Cuba and Venezuela: 225 accounts propagated information created by Cuban and Venezuelan media outlets, including cyborgs (18) located in Venezuela, Colombia and Cuba, as well as highly suspicious users (10) located in Colombia. The media outlets experienced peaks in posts during November 2019 and September 2020 (Cuban media), and January 2020 and August 2020 (Venezuelan media).

Having had the opportunity to analyze thousands of Tweets from actors or authoritarian states that spread disinformation:

What are the conclusions regarding the key points that characterize these actors and their way of operating? What has been the impact of this ecosystem and activity on civil society in the respective countries?

- In general, we recognized different modes of operation framed in the logic of sharp power, through the strategy of each of the States studied:

  - China prioritizes posts that present itself as an ally of developing countries while being respectful of the domestic conditions of each country. In this case, posts about economic and commercial matters stand out.

  - Russia focuses on posts that are critical of democratic countries with strong relationships with the U.S. It resorts to constant mention of the shortcomings of these government institutions and visibility is given to social protests, acts of repression and human rights violations.

- Cuba and Venezuela reference their revolutions to highlight the weakness of capitalist governments and the strengths of their regimes. Cuba focuses on denouncing the sanctions imposed by the U.S. and advances in medicine and education, while Venezuela criticizes the institutional legitimacy of opposing countries.

- The interest of these States in carrying out disinformation strategies (of "propaganda" nature) in Colombia is significantly low since there is not a large production of tweets focused on the country. Therefore, the impact on the media user ecosystem and social activity in Colombia is low.

- The case study that drew the most attention to Colombia and perhaps generated some impact was that of Russia. Posts from Russian media questioned the Colombian government's disrespect for social protests and human rights, resulting in interactions mainly from local opposition.

In what way did the methodological approach to the case studies help understand and break down the activity generated by the different agents of disinformation in each country? In what ways and with what resources could we further understand or research disinformation in the respective countries?

- The methodological approach used allowed for a significant level of detailed analysis. We were able to profile users disseminating information from different media outlets and identifying those who did so for more than one of the States under scrutiny (see recommendation 8.1).

- It is difficult to access sophisticated technological resources designed to search for users that spread disinformation. Having access to these resources would allow us to deepen and further specify our findings (see recommendation 8.2).

What are your recommendations for democratic countries in Latin America Latin and their respective civil societies for mitigating and counteracting the effects and harm caused by disinformation propagated by China, Russia and other authoritarian states?

- First, we recommend policies aimed at reducing gaps in access to information so that society can weigh the information it receives. Second, we recommend promoting data journalism programs working to develop fact-checking tools (see recommendation 8.3).

Who, how, when, where, through what means, and in what way have authoritarian countries such as China, Russia and others used the issue of COVID-19/vaccines to divide/cause controversy/disinform?

- This study confirmed that COVID-19 was not a priority topic used to impact the information ecosystem in Colombia. Only China covered COVID-19 during the period of study, however, it limited its content to information about the number of cases in Colombia. Therefore, we can assume that the States did not use COVID-19 as part of their disinformation strategies.

RECOMMENDATIONS

In what way did the methodological approach to the case studies help you understand and break down the activity generated by the different agents of disinformation in each country?

The methodology used to search for disinformation in Colombia focused on the Spanish Twitter accounts of media outlets affiliated with non-democratic countries that are part of Colombia's national media ecosystem. Through this approach, media strategies were understood in more detail by focusing on three main aspects: 1. identification of topics, 2. identification of publication peaks, and 3. identification of inorganic users. By examining the topics discussed in posts about Colombia, it was possible to develop a kind of dictionary or semantic field corresponding to each medium that facilitated the search for more specialized information in Twitter's API. In addition, it was possible to identify peaks in posts by accounts producing information. Posts that emphasized certain topics related to Colombia's domestic situation stood out. These findings are decisive for future research and will allow us to understand how much emphasis is placed on certain topics related to Colombia. Finally, the use of social networks analysis (SNA) and machine learning applications such as Botometer and Pegabot were critical to the identification of users with disproportionate behavior seeking to manipulate the online debate, driving content trends and influencing information campaigns.

In what ways and with what resources could we further understand or research disinformation in the respective countries?

To understand the behavior of inorganic users in Colombia, it is essential to improve open source applications that allow for further analysis of this phenomenon. For example, machine learning applications such as Botometer (https://botometer.osome.iu.edu) or Pegabot (https://pegabot.com.br) were created to analyze Twitter users, however, they include a series of limitations to accessing information, which prevents complete accuracy of results and requires caution when extracting information.

Based on these research findings, it would be useful to focus resources on deeper georeferencing of inorganic users working in coordination to disseminate content produced by the Venezuelan and Russian media outlets in Colombia. Once their location is identified, it is possible to counteract disinformation strategies by demystifying or

confirming rumors that exist in public opinion due to statements of certain political groups that seek to polarize civil society.

What are your recommendations for democratic countries in Latin America Latin and their respective civil societies for mitigating and counteracting the effects and harm caused by disinformation propagated by China, Russia and other authoritarian states?

There is a gap in digital access and the study of disinformation in Colombia, making it difficult for civil society to counteract the effects of this phenomenon. This is proven by the high costs of sophisticated tools allowing those with greater access to identify anomalies in the information disorder. Thus, bridging this access gap would facilitate research to mitigate disinformation.

To mitigate disinformation operations in Colombia, it is critical to strengthen the emerging field of data journalism and foster alliances between journalists, fact-checkers, civil society organizations (https://colombiacheck.com, https://linternaverde.co/en/ and https://web.karisma.org.co), and academia. Collaborations between these groups would allow for focused analysis of particular cases of disinformation driven by Russia, China and domestic political groups. In addition, counteracting disinformation requires a greater understanding of sharp power strategies to combat rumors circulating among public opinion as a result of targeted campaigns.

Centro para la Apertura y Desarrollo de América Latina (CADAL) – Propaganda and Disinformation from China and Russia in Argentina, Chile, and Peru

In this study by CADAL, disinformation is demonstrated to be one of the main elements of Chinese and Russian government strategies for political influence in Argentina, Chile, and Peru. This disinformation is conducted by Russian and Chinese state media companies, which use the omission of data, the selective treatment of facts, and propaganda with political intentionality. The evidence indicates that the Russian state media engages in a very direct fashion often to stir up social discontent and sow discord, while Chinese media utilizes a more subtle diplomatic approach to establish itself as the most desirable hegemonic power to partner with commercially and politically. Both Russian and Chinese governments play up the positive aspects of their countries' COVID-19 vaccine while stressing the negative features of U.S.-Western alternatives. At the same time, Russian media disproportionately focused on social protests in Chile, a key U.S. ally in the region. In Argentina, Chile, and Peru, China stresses its role as a benevolent and generous partner.

INTRODUCTION AND METHODOLOGY

Disinformation is one of the main elements of Chinese and Russian strategies for political influence. Disinformation encompasses subtle forms of information manipulation, including the omission of data, the selective treatment of facts, and propaganda with political intentionality. It is not only a matter of spreading lies, but a combination of truths and falsehoods, of informative omissions and selective treatment of facts and data, in order to deceive audiences.

Demonstrating the intentionality of messages and identifying misinformation requires a thorough, case-by-case analysis of all published content, including inquiries into the accuracy of the facts and the credibility of the sources. Given the complexity of such an analysis, this study focuses on identifying, describing, and analyzing the narratives, propaganda, and misinformation disseminated by major Chinese and Russian state media to Latin American audiences.

Chinese and Russian official media have, for years, invested extraordinary resources to internationalize and spread their messages and narratives around the world in different languages, including Spanish and Portuguese. Their treatment of journalism and their way of understanding the role that the media play in society is seen most evidently in their own domestic information ecosystems, which are hardly built on an appreciation for alternative points of view that would otherwise enrich the plurality of information in the field of communication.

On the contrary, Chinese and Russian state media serve political power. This implies that they operate in practice as genuine entities of the state, whose function, both at home and abroad, is to disseminate the messages of the state—in the form of propaganda and disinformation—with the aim of supporting the political agenda and objectives of their governments. Moreover, the preponderance of Chinese and Russian media operating in Latin America do not take the form of transparent media companies, independent from the government and committed to the ethical practice of journalism. They are, in fact, journalistic actors at the service of the political causes of the moment, receiving abundant resources from the State, which in turn insulates them for the fiscal and economic concerns of their private sector media competitors.

The evidence gathered in this study points to a Russian state media apparatus that engages in a very direct way, while Chinese media falls back on more subtle engagements. Still, both countries, each in their own ways, manage to disrupt the information landscape by manipulating content and molding public opinion, taking advantage of knowledge deficits that exist in Latin America. This issue is of vital importance to any democratic society—that is, the conveying of information has the power to mobilize, to increase transparency, to stimulate participation, to promote citizen involvement, and to bring about social change. Invading the information space with a concerted campaign of propaganda and deliberately false information undermines democracies and makes free societies all the more vulnerable.

China, whose influence is already significant throughout the world and the developing world in particular, is uniquely effective in its efforts to take advantage of knowledge deficits among Latin American elites, which manifest in a fundamental misunderstanding about Chinese history, its political structure, its state capitalism, and its relationship with the rest of the world. This lack of understanding creates particularly favorable conditions for the dissemination of Beijing's official narratives with little resistance.

Beijing's efforts to woo Latin American societies create space for embassies and state media to take a leading role in engaging with Latin American elites, often through networks of "allies," or institutions and individuals that disseminate Beijing's most important narratives. This study will closely analyze the role played by China's "allies" in amplifying and disseminating the very narratives and propaganda of interest to the Chinese government.

This analysis will begin by closely covering the main state media apparatuses in China and Russia to determine their narratives of choice. Such a review pointed to a particular focus on the development of Chinese and Russian COVID-19 vaccines. In addition, two other topics are frequently mentioned by Chinese and Russian state media: on the one hand, the Chinese media dedicates significant coverage to the eradication of poverty in China; and, on the other hand, Russian media disproportionately focused on social protests in Chile.

The main Chinese and Russian state media outlets were selected in their Spanish editions: for Russia, RT television in Spanish (https://actualidad.rt.com) and Sputnik Mundo (https://mundo.sputniknews.com); for China, the Xinhua news agency (http://spanish.xinhuanet.com/mobile/index.htm), the newspaper Pueblo en Línea

(http://spanish.peopledaily.com.cn), CGTN television (https://newses.cgtn.com/portada), and China Radio International (http://espanol.cri.cn).

The period of analysis of the different topics runs from September 1, 2020 to July 15, 2021, according to the breakdown in the following table:

Theme	Period of Analysis	Media Analyzed
Development of vaccines	September 1, 2020 to April 15, 2021	Xinhua, CGTN en español, Pueblo en Línea, Radio Internacional de China, Sputnik Mundo, RT en español
Eradication of poverty	November 1, 2020 to July 15, 2021	Xinhua, CGTN en español, Pueblo en Línea, Radio Internacional de China
Social protests in Chile	September 1, 2020 to April 15, 2021	Sputnik Mundo, RT en español

Using the MyNews search tool (https://www.mynews.es), we searched for and pre-selected the news published by the aforementioned media outlets on these three primary topics, refining the search through keyword filters,[194] resulting in a pre-selection of articles to which new filters were later applied in order to obtain a representative sample of the news published on these topics.[195] This representative sample forms, for each subject under study, a corpus of articles on which a double analysis may be carried out: on the one hand, a quantitative analysis and classification of the news on each topic based on their headlines, and on the other hand, a qualitative examination of the contents of each topic based on an analysis by keywords. For this purpose, we use the Python tool (https://www.python.org), which breaks down words into keywords associated with the narratives disseminated in the media. This decomposition of the contents into phrases and words allows for the identification of the most repeated words and categories. The tool thus provides the total number of mentions of each word in the total number of articles, the number of articles in which each selected word is mentioned at least once, and the number of times in which the selected words are part of the most visible part of the news item, such as in the title, subtitle, or first few sentences.

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[194] "vacuna," "vacuna china,", "vacuna rusa," "Sinopharm," "Sinovac," "Coronavac," "CanSino," "Sputnik," "Pfizer," "Moderna,", "AstraZeneca," "Johnson & Johnson," "Janssen," "pobreza," "erradicación," "mapuches," "Allende," "Pinochet," "protestas sociales" ("vaccine," "Chinese vaccine," "Russian vaccine," "Sinopharm," "Sinovac," "Coronavac," "CanSino," "Sputnik," "Pfizer," "Moderna," "AstraZeneca," "Johnson & Johnson," "Janssen," "poverty," "eradication," "mapuches," "Allende," "Pinochet," "social protests.")

[195] In the screening process, all content that is not prima facie linked to vaccine diplomacy was eliminated. For example, when "modern" is used as an adjective. Also, COVID-19-related news items reflecting official data on infections or deaths, as well as news about confinements or other measures taken by the authorities both in China and abroad, were eliminated. Repeated news items in the same media were also eliminated, but not identical news items published by two or more media outlets analyzed, as each media outlet targets different audiences.

Python also calculates the number of times a word or group of words matches in the same sentence with another word or group of words, which is useful for linking words and arriving at more reliable deductions. For example, if words like "side effects" and "unsafe" match in the same sentence with "Astra Zeneca" or "Pfizer," one can conclude that the media is wrapping news about Western vaccines in negative language. If that linkage is frequently placed in the headline or in the first few sentences of the news story, it can then be inferred that this narrative that the media is trying to disseminate is important. The conclusions drawn from the Python data are ultimately coupled with a thorough, in-depth qualitative analysis of article content. The methodology described is intended to establish as comprehensive an empirical review of the narrative and propagandistic tendencies of Chinese and Russian actors in the media space as possible.

The second central pillar of analysis is a robust mapping of China's "allies" in Argentina, Chile, and Peru. These individuals and institutions are important insofar as they act as "disseminators" of Beijing's narratives. We have chosen to analyze the role and impact of these "allies" through their activity on Twitter and, to a lesser extent, through their activity on Facebook. The universe of "disseminators" to be analyzed is 54 accounts across both social networks.

The period of analysis for this study is from January 1, 2020 to July 15, 2021, a time cycle that encompasses the COVID-19 pandemic, including the Chinese donation campaign related thereto, the development of vaccines, and the distribution of vaccines on a global scale. In addition to exploring this vaccine theme, the monitoring also included the theme of poverty eradication in China. Twitonomy and FanpageKarma were the tools used to download users' tweets and posts.

To the huge volume of data, different filters were applied to discard the tweets not related to the chosen topics. All those unrelated to China were discarded first, and the rest of the tweets were classified in Excel spreadsheets by topic area after assigning them a series of specific words. This allowed us to quantify the number of posts that each user devoted to each topic. We then proceeded to analyze the posts based on content and context.

Finally, to verify whether Chinese propaganda filters through to the media in the three Latin American countries that we covered, we carried out a similar methodological exercise by downloading and analyzing all tweets published by the 14 representative media outlets in Argentina, Chile, and Peru. This analysis provides a glimpse into whether China's official propaganda ends up being reflected in the local press.

NARRATIVES AND PROPAGANDA IN CHINESE MEDIA

Vaccines

Background

From September 1, 2020 to April 15, 2021, we studied the narratives deployed by Beijing regarding the COVID-19 pandemic. This campaign aimed, on the one hand, to deny both the accusation that the virus originated in China and that it spread around the world due to a cover-up by the Chinese authorities. On the other hand, it sought to present China to the international community as a responsible and generous country, wrapping its role as a global supplier and donor of medical supplies in a rhetoric of friendship.

The propaganda campaign promoted by the Chinese government, which was disseminated by Chinese state media, entered a new phase when the world media attention around COVID-19 turned to the development of vaccines as a solution to the health crisis. From that moment on, which coincides with the period of analysis of this study, the official media discourse focused on supporting scientific research, and the efficacy and safety of Chinese vaccines. In particular, Chinese state media focused on the achievements of the Chinese Communist Party (CCP) related to vaccine production and the way in which the Chinese model of management and development furthered the success of vaccine production.

Analysis of the Headlines

For the most part, Chinese state media includes its main messaging in article headlines. As such, we conducted an analysis of the headlines of 921 articles published by Xinhua, CGTN, China Radio International, and People Online during the study period.

In a first category, 122 headlines mentioning Chinese vaccines (Sinovac, CoronaVac, Sinopharm, CanSino)[196] in terms of their characteristics, efficacy, safety, and scientific development; this category does not include news about Chinese vaccines sent to Latin America and the developing world (which make up a separate category).

Most of the headlines in this first category largely praise or legitimize the Chinese vaccine, with 35 expressly mentioning the efficacy and safety of Chinese vaccines, 24 referring to the development and successful clinical trials of the Chinese vaccines, 28 reporting on the approval, marketing, production, supply, or distribution of the vaccines, and 11 showing examples of media and other foreign actors legitimizing the Chinese vaccines.

The second category of headlines includes 251 news stories that refer to foreign vaccines, both Western (Pfizer, Moderna, AstraZeneca, Johnson & Johnson, and Janssen) and the Russian Sputnik V. This category includes these two groupings todetermine how Chinese media present foreign vaccines in comparison to the narrative surrounding Chinese vaccines. In this category, we found 71 headlines that linked Pfizer, AstraZeneca, Moderna, Janssen, and Johnson & Johnson vaccines with negative language, alluding to "problemas," "efectos secundarios," "reacciones adversas," "trombosis," "reacciones alérgicas," "muertes," "enfermedades," "coágulos," "complicaciones," "anafilaxis," "preocupación," "pesimismo," "restricciones," "revisiones," "pausas," "suspensiones," "demoras," "lentitud," "atrasos," "interrupciones," "investigaciones," "suministro

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[196] Sinovac and Sinopharm refer to the two major Chinese biotechnology companies that have developed vaccines against COVID-19. CoronaVac is the trade name of Sinovac's vaccine.

reducido" o "eficacia cuestionada" ("problems," "side effects," "adverse reactions," "thrombosis," "allergic reactions," "deaths," "diseases," "clots," "complications," "anaphylaxis," "worry," "pessimism," "restrictions," "reviews," "pauses," "suspensions," "delays," "slowness," "backlogs," "interruptions," "investigations," "reduced supply" or "questioned efficacy").

Another 55 headlines linked to Western vaccines were purely informative. Of note, none of the 50 Chinese state media headlines on the Russian vaccine Sputnik V described that vaccine in negative terms.

The third category contains 402 news items in which Chinese vaccines are legitimized or promoted in Latin America and the rest of the developing world, thereby creating the image of a China capable of developing a reliable and safe vaccine. These news stories were typically littered with examples of Latin American governments and institutions heaping praise on China for its efforts. Prominent among the headlines are those announcing successful clinical trials of Chinese vaccines, thereby reaffirming the vaccines' perceived safety and efficacy.

Of the regional breakdown within this category, the "Latin America" region was generically mentioned 24 times, 48 mentions of Brazil, 27 mentions of Peru, 36 mentions of Chile, and 19 mentions of Argentina, as well as 93 mentions of other Latin American countries. There are 13 generic mentions of the "developing world," as well as another 112 mentions of a total of 25 developing countries and regions outside of Latin America. Finally, 13 mentions were made of Hungary and 7 of Serbia, both among Beijing's European allies.

The fourth category of analysis includes 146 news items with headlines extolling China's role in the world or the strengths of the Chinese model of governance. The headlines in this category are peppered with slogans and terminology that are commonplace in China's diplomatic rhetoric.

Thus, the terms "donación," "comunidad de salud," "responsabilidad," "liderazgo," "bien público mundial," "multilateralismo," "disponibilidad," "ayuda," "acceso equitativo," "compromiso en el suministro," "distribución justa" y "distribución equitativa" ("donation," "health community," "accountability," "leadership," "global public good," "multilateralism," "availability," "aid," "equitable access," "commitment to supply," "fair distribution," and "equitable distribution") are mentioned directly in the headlines (where it receives the most attention, by virtue of its location) 46 times. For its part, the word "cooperación" appears in the headline of 27 news items.

Inventario de 921 artículos

- **Vacunas chinas** — 122 artículos

  Incluye
  - **35** eficacia y seguridad
  - **24** desarrollo y ensayos clínicos
  - **28** aprobación comercialización, producción, suministro o distribución
  - **11** legitimación en medios de comunicación y otros actores extranjeros

- **Vacunas extranjeras** — 251 artículos

  Incluye
  - **71** retórica negativa (efectos secundarios, problemas, eficacia,...)
  - **55** comentarios neutros
  - **50** Sputnik V (sin componentes negativos)

- **Vacunas chinas en AmLat o mundo en desarrollo** — 402 artículos

  Incluye
  - **24** genéricas a AmLat
  - **48** Brasil
  - **27** Perú
  - **36** Chile
  - **19** Argentina
  - **93** resto de AmLat
  - **25** genéricas mundo en desarrollo
  - **13** Hungría
  - **7** Serbia

- **Ensalzamiento Gobierno chino** — 146 artículos

  Incluye
  - **46** donación, responsabilidad, comunidad de salud,...
  - **27** cooperación

Our comprehensive study found that China presents itself as a technological and scientific powerhouse, whose biotech companies are at the forefront of vaccine research, development, and production. Amid the competition between countries to offer a solution to the pandemic, the Chinese media strive to demonstrate the unique efficacy and safety of Chinese vaccines, without making any mention of the criticisms levied against China and its vaccines. At the same time, Chinese state media engage in a concerted campaign of questioning the efficacy and reliability of vaccines developed by Western biotech companies like Pfizer-Biontech, AstraZeneca, Moderna, Johnson & Johnson, and Janssen. The study found that more than half of Chinese state media headlines about Western vaccines questioned the suitability of those vaccines, while none of the headlines referring to the Russian Sputnik V vaccine had the same negative connotations.

The idea that Chinese vaccines are suitable is confirmed by more than 400 headlines showing acceptance by leaders, personalities, governments, and institutions in 44 countries in the developing world (half of them in Latin America), either through news reporting production or supply agreements, donations, or shipments of batches of vaccines, the perceived success of clinical trials, praise for Chinese vaccines, or their reliability.

The absence of any criticism of its vaccines and headlines hinting at the developing world's support for China's role in vaccines creates a false image of legitimization that the Chinese media exploit to portray Beijing as the leader and champion of the developing world, to which it offers aid and equitable vaccine distribution. To this end, they wrap their discourse in a rhetoric of friendship, aid, and cooperation.

In doing so, they disseminate a narrative around COVID-19 in a geopolitical code that allows them to present Beijing's authoritarian system as a model of management and China as a responsible and generous international actor called to become the global power

of the future. These propagandistic narratives coincide point by point with the political narratives conveyed by the Chinese authorities in their public appearances.

As illustrated below (Figure 2), the development of effective and safe Chinese vaccines is used by China to spin a narrative as a responsible power. At the same time praise of Chinese vaccines leads to objections about the suitability and reliability of Western vaccines. The official narrative links the development and distribution of vaccines to a rhetoric of cooperation, directed especially at the developing world and with a focus on Latin America.
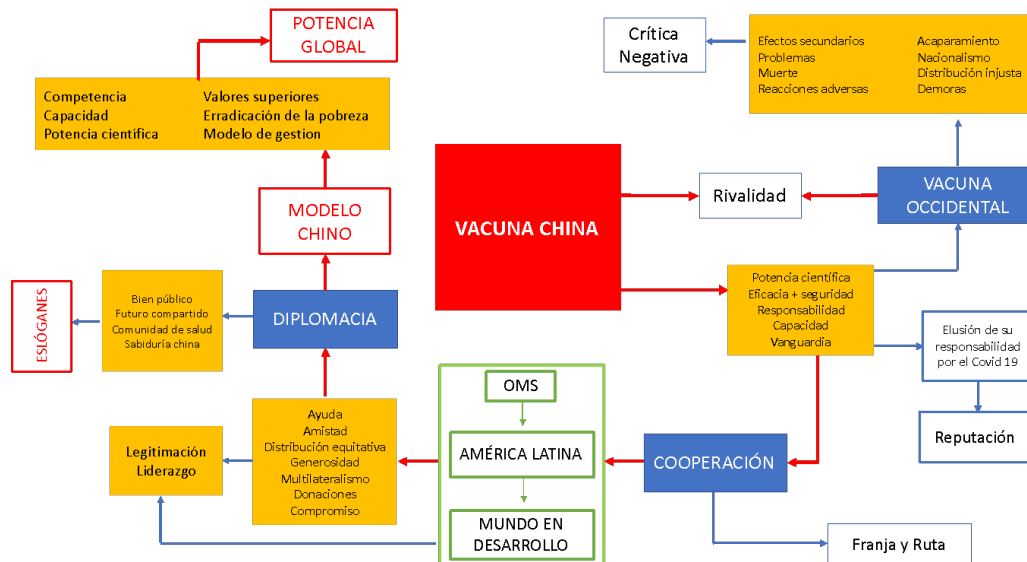
(Figure 2)

Content Analysis

The decomposition of the contents into phrases and of these into words through the Python tool allows the identification of the most repeated words. This helps to decipher the narratives that are intended to be disseminated.

The raw data extracted from Python are threefold: 1) the total number of mentions of each keyword in the inventory of articles; 2) the number of articles in which each selected keyword is mentioned at least once; and 3) the number of times in which the selected keywords are part of the title or the first six sentences of the article (i.e., in the first paragraph), which is where they are most visible.

The first conclusion drawn from the Python data is the preponderance of the vaccine theme, with the aim of presenting the Chinese offer in a positive light and Western vaccines in a negative light. Of the total number of news items, Chinese and international

vaccines[197] are cited a total of 3,599 times in 1,207 articles.[198] The four most frequently mentioned Chinese vaccines, generically referred to as "Sinovac," "Sinopharm," "CoronaVac," and "CanSino," are mentioned almost twice as often as Western vaccines (identified as "Pfizer," "AstraZeneca," "Johnson & Johnson," "Moderna" and "Janssen"), as shown below:

MENCIONES DE LAS VACUNAS EN LOS MEDIOS CHINOS			
Word (keyword)	Sum of word_count (1)	Sum of #_art (2)	Sum of in_header (3)
sinovac	1.048	249	344
sinopharm	654	214	219
coronavac	422	147	99
cansino	130	52	42
cansinobio	1	1	1
Total Chinese Caccines	2.255	663	705
astrazeneca	599	198	217
astrazenecaoxford	24	11	11
oxfordastrazeneca	2	2	2
pfizer	207	105	55
pfizerbiontech	110	55	25
biontechpfizer	26	10	8
Moderna (4)	117	68	38
johnson (5)	104	21	48
janssen	24	13	8
Total Western Vaccines	1.213	483	412
sputnik	131	61	60
Total Russian Vaccines	131	61	60
Total Vaccines	3.599	1.207	1.177
1) number of mentions of each word (keyword)			
2) number of atricles in which each word (keyword) is mentionaed at elast once			
3) number of times the word (keyword) appears in the first 7 sentences of the article			
4) The tool does not distinguish between nouns and adjectives			
5) The number of mentions had been divided by 2 to avoid double counting (for Johnson & Johnson)			

Consistent with what was seen in the headline study, Python's analysis also suggests that the main narrative of the Chinese media pivots around the praise of the Chinese vaccine. Thus, the official narrative focuses on showing the strengths of Chinese vaccines by

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[197] To avoid duplication, the expressions "vacuna china," "vacuna rusa" y "vacuna occidental" were excluded in the selection of words, and the search was carried out using the commercial or corporate names of each vaccine.

[198] This refers to the number of articles in which each vaccine (Chinese, Russian or Western) is mentioned at least once. When two or more keywords are mentioned in the same article, Python counts each mention as appearing in a new article. This explains why the number of 1,207 articles exceeds the 921 that make up the news inventory under analysis.

spreading the message that they are effective and safe, i.e., that they are capable of eliciting an immune response and, at the same time, that they do not carry health risks.

This thesis is reinforced by counting the number of times the words "seguridad" and "eficacia" are mentioned in the corpus of articles: 1,022 allusions. By breakdown, the first family of words ("seguridad," "segura") is mentioned a total of 526 times in 358 articles. In turn, the second family of terms ("eficacia," "eficaz," "efectividad," "eficiencia") is repeated 496 times in 282 news items, as shown below:

VACUNAS CHINAS/ Palabras clave en positivo por menciones y número de artículos

	Número de menciones	Número de artículos
Seguridad	526	358
Eficacia	383	203
Efectividad	93	61
Eficiencia	20	18
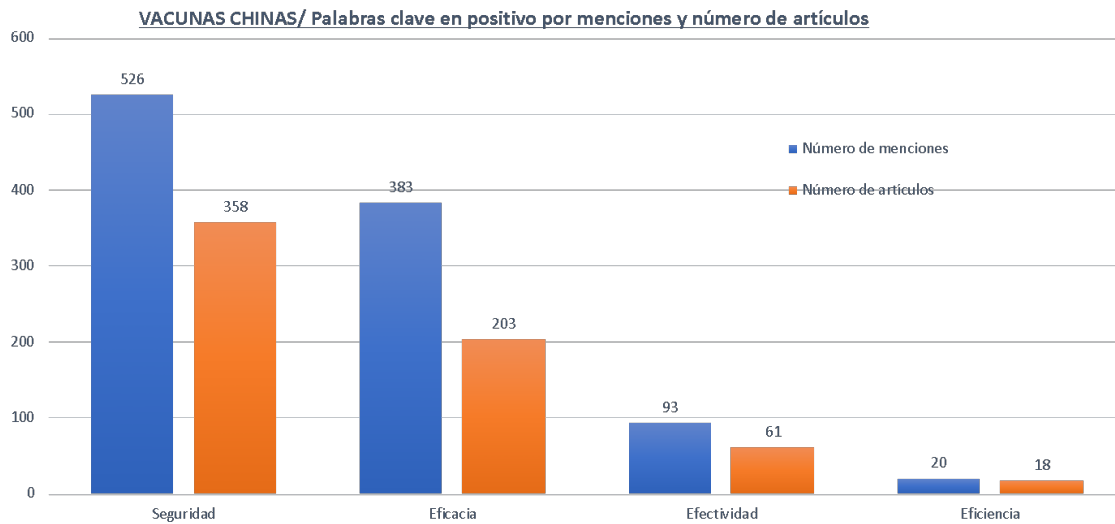
More relevant is that the Python tool concludes that Chinese vaccines are usually linked to words with positive connotations, while Western vaccines are associated with terms with negative connotations. Thus, the words "eficacia," "seguridad," "contribución," "liderazgo," "responsabilidad" or "bien público" are used multiple times in the same sentence, which presents them in favorable terms

The data does not include an undetermined number of positive mentions of Chinese vaccines whose linkage with the mentioned words does not appear in the same sentence, but in other previous or subsequent sentences. Nor does the formula capture all the times in which Chinese vaccines were presented in a positive light using words other than those selected.

On the contrary, the Chinese media frequently associate Western vaccines with words with negative connotations, in order to raise suspicions about their efficacy or safety or to present them in a negative light. Thus, on 133 occasions, vaccines from Pfizer, Moderna, AstraZeneca, Johnson & Johnson, or Janssen are associated in the same sentence with the terms "enfermedad," "muerte," "problema," "efectos adversos," "reacción adversa," "interrupción," "efectos secundarios," "acaparamiento," "cuestionamiento," "demora," or "nacionalismo."[199]

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[199] As in the case of Chinese vaccines, the statistics do not show how many times Western vaccines are criticized using negative words other than the above, or if these words are not used in the same sentence.

NÚMERO DE MENCIONES

NÚMERO DE ARTÍCULOS

Occidente 133
China 300

Occidente 89
China 166

Palabras clave asociadas a las vacunas chinas:

Eficacia	Responsabilidad
Seguridad	Liderazgo
Contribución	Bien público

Palabras clave asociadas a las vacunas occidentales:

Enfermedad	Efectos adversos	Efectos secundarios
Problema	Acaparamiento	Reacción adversa
Demora	Interrupción	Nacionalismo
Muerte	Cuestionamiento	
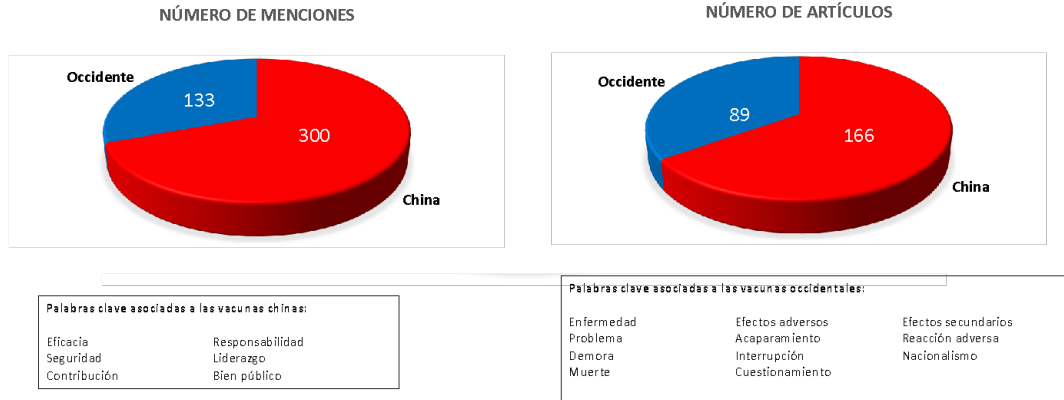
* Número de menciones de palabras clave (Keyword) asociadas en la misma frase a una vacuna

One example of the negative spin on Western vaccines came when 23 elderly people in Norway died after being inoculated with the Pfizer vaccine. , CGTN headlined: "Western media remain silent on alleged deaths caused by the Pfizer-BioNtech vaccine." It is striking that such an expeditious headline does not warrant the provision of evidence and that the development is dispatched in 207 words. However, a brief text includes a direct message in a political fashion: "It is striking... that the vast majority of Western media remain silent on the matter, while they criticize without basis the vaccines developed by China and other nations, which they label as "unreliable."[200]

In order to understand the differences between the perceived flippancy with which Chinese state media construct their vaccine narrative, and what we might consider to be a contrasting version of the facts, the comparison can be illustrated as follows:

	Chinese Media Narrative	Contrasted Version
Phases I and II	Certainty of its safety and efficacy Promotion and praise of Chinese vaccines Reference to the publication of the studies in *The Lancet*	Phases I and II do not allow scientific conclusions to be reached Studies funded by Chinese institutions No data presented to prove those vaccinated are not infected

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[200] "Los medios occidentales guardan silencio sobre presuntas muertes causadas por la vacuna de Pfizer-BioNTec," CGTN, January 1, 2021 hhttps://espanol.cgtn.com/n/2021-01-17/EIeJcA/Los-medios-occidentales-guardan-silencio-sobre-presuntas-muertes-causadas-por-la-vacuna-de-Pfizer-BioNTech/index.html

Clinical Trials	Successful trials Proven efficacy of the Chinese vaccine Omission of criticism	Confusing or contradictory data 4 different percentages of efficacy Indonesia: 65 percent Turkey: 91.25 percent Brazil: 50.38 percent and 78 percent Data discrepancy regarding Brazil: percentage of efficacy not consistent with disaggregated data Fragmented information and delay in the publication of results Information lacking to conclude the efficacy of Chinese vaccines
Western Vaccines	Disinformation campaign against Western vaccines Suspicions about efficacy and safety Publication of news with data on adverse effects and deaths attributed to these vaccines Attack on new technology used by Pfizer and Moderna	More effective than Chinese ones according to published data New technology Results of their studies in peer-review publications for scrutiny by the scientific world
Transparency	There are "Western politicians and media who cannot see the progress of China's vaccine research and development, maliciously distorting and discrediting, spreading rumors such as 'China uses vaccines as a geopolitical tool.'" "The recent frequent appearances of 'demonizing' the Chinese vaccine are not only politically motivated, but also commercially motivated."	Chinese companies have released less data and results than Western ones. Chinese company did not provide a breakdown of trial results, nor did it disclose data on serious side effects Head of unit of Chinese company assured that they will publish more details of the results later, without specifying a date
Approval	For emergency use in China from months before approval Final approval on 31 December, 2020	Sale of Chinese vaccines abroad before final approval in China 24 countries, mostly low-income, signed agreements with Chinese companies
Vaccination	Announcement of vaccination of 50 million people for Chinese New Year ahead of vaccine approval Vaccination in China: 40 million people or 3 percent of its population	

Narrative	Political use of the Chinese vaccine Vaccine to present itself as a scientific power, responsible international actor and solidarity with the developing world COVAX: commitment of 380 million doses for the developing world	Loss of confidence in Chinese vaccines COVAX: 11.6 billion doses offered by the U.S., UK and India

Once Chinese vaccines have been presented in a positive light and Western vaccines in a negative light, the next step is to try to legitimize Chinese vaccines by highlighting any positive reference from abroad that can be presented as recognition. Any allusion to the Western media that serves to magnify the relevance of the data and narratives to be disseminated contributes to this purpose.

For example, at the beginning of September 2020, following Chinese President Xi Jinping's visit to Wuhan, the Xinhua news agency published a long, 6,357-word, propaganda-heavy article entitled "Chronicle of Xi's leadership in China's war against COVID-19."[201] To support the official narrative around COVID-19, the article refers to a mention in UK-peered reviewed medical journal, The Lancet, which noted that "there are important lessons that the world's presidents and prime ministers can learn from China's experience in slowing the spread of infection."

Xinhua also published in a headline that the Chinese vaccine "'presents exceptional efficacy data' publishes Science magazine," but omits that the information published by the magazine merely disseminates a press release from the Ministry of Health of the United Arab Emirates, a country where a clinical trial of one of the Chinese vaccines was being carried out.[202] The headline is misleading because it leads one to believe that the data on the efficacy of the Chinese vaccine comes from a prestigious specialized journal, when in fact the original source is the UAE government.

The technique of selection for convenience is also used: the part of the information that is of interest is used and the part that is not is omitted or minimized. For example, Xinhua headlined: "Chinese vaccine in trials against COVID-19 is safe, according to preliminary results published by 'The Lancet'," although it then acknowledges in the body of the news item that "the aim of the study was not to evaluate the vaccine's efficacy." It is also not clearly stated that the study corresponds to phases I and II, whose scientific relevance, due to the size of the sample, is much less than the headline suggests.

Other examples of Chinese media references to what was published in the Western media can be seen in the following table:

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[201] The article was also published in the Spanish editions of CRI and China.org. "Crónica del liderazgo de Xi en la guerra de China contra COVID-19 (1)," *Spanish China Org*, September 9, 2020. Available at: http://spanish.china.org.cn/txt/2020-09/09/content_76684626.htm.

[202] Jon Cohen, "Great efficacy claimed for another COVID-19 vaccine, this one from China," *Science,* December 9, 2021. Available at: https://www.sciencemag.org/news/2020/12/great-efficacy-claimed-another-COVID-19-vaccine-one-china

Date	Media	Title	Reference
4/9/20	FT and New York Times in Xinhua	Fase 3 de ensayos de vacuna de China en extranjero atrae atención de medios occidentales http://spanish.xinhuanet.com/2020-09/04/c_139340866.htm	"Citing China's National Health Commission, The Financial Times newspaper reported on the upcoming trials on Tuesday, while *The New York Times* also reported the go-ahead for the trials and its website tracked the latest development of COVID-19 vaccine research."
9/9/20	The Lancet in Xinhua/CRI	Enfoque: Crónica del liderazgo de Xi en la guerra de China contra COVID-19 http://spanish.china.org.cn/txt/2020-09/09/content_76684626.htm	Refers to a phrase published in *The Lancet* in which he points out that other countries can learn from China's experience with COVID-19.
17/10/20	The Lancet in Xinhua	Vacuna china en pruebas contra COVID-19 es segura, según resultados preliminares publicados por "The Lancet" http://spanish.xinhuanet.com/2020-10/17/c_139447362.htm	Refers to a phase I and II study published in *The Lancet* to say the Chinese vaccine is "safe." In another paragraph it says: "The aim of the study was not to evaluate the efficacy of the vaccine, so it is not possible to determine whether the vaccine-induced response... it is enough to protect from contagion."
23/10/20	Washington Post in CRI/CGTN	China promueve la distribución justa de vacunas mundiales https://espanol.cgtn.com/n/2020-10-23/EDGfEA/china-promueve-la-distribucion-justa-de-vacunas-mundiales/index.html	Mentions that the *Washington Post* published that vaccines enter phase III.
19/11/20	The Lancet in Xinhua	Vacuna china de COVID-19 induce respuesta inmune, según investigación http://spanish.xinhuanet.com/2020-11/19/c_139527577.htm	Refers to the study on Chinese vaccines in phases I and II published by *The Lancet.*
19/11/20	The Lancet in el Diario del Pueblo	Cinco vacunas chinas COVID-19 en ensayos clínicos http://spanish.peopledaily.com.cn/n3/2020/1119/c92121-9782123.html	They refer to *The Lancet* to state that the study "has fully demonstrated that Chinese vaccines are safe and effective." It points out that it is a "mid-stage trial" to avoid saying that it corresponds to phases I and II.
9/12/20	Fortune magazine in CGTN	China está cumpliendo su compromiso con el mundo sobre la vacuna de nuevo coronavirus https://espanol.cgtn.com/n/2020-12-10/EGIEEA/china-esta-cumpliendo-su-compromiso-con-el-mundo-sobre-la-vacuna-de-nuevo-coronavirus/index.html	Mentions that a "*Fortune* magazine article from the 5th noted that China's new coronavirus vaccine could fill the gap in the global supply of vaccines."

Date	Source	Headline / Link	Observation
9/12/20	FT in CGTN	China está cumpliendo su compromiso con el mundo sobre la vacuna de nuevo coronavirus https://espanol.cgtn.com/n/2020-12-10/EGIEEA/china-esta-cumpliendo-su-compromiso-con-el-mundo-sobre-la-vacuna-de-nuevo-coronavirus/index.html	In the same article, criticism of the FT: "The British *Financial Times* falsely claimed in a report that 'the use of Chinese vaccine is a risky act due to political factors.'"
11/12/20	Science magazine in Xinhua	Vacuna contra COVID-19 china presenta "datos de eficacia excepcionales," publica revista Science http://spanish.xinhuanet.com/2020-12/11/c_139582468.htm	Conceals that the statement is not a conclusion of the journal *Science*, but that it is limited to disseminating the content of a press release from the UAE Ministry of Health, which refers to the efficacy data of the Chinese vaccine in a clinical trial.
14/12/20	WSJ in CRI/CGTN	Los resultados de los ensayos clínicos en los EAU muestran que una vacuna candidata de China contra la COVID-19 tiene una tasa efectiva del 86 % https://espanol.cgtn.com/n/2020-12-15/EGcecA/los-resultados-de-los-ensayos-clinicos-en-los-eau-muestran-que-una-vacuna-candidata-de-china-contra-la-COVID-19-tiene-una-tasa-efectiva-del-86/index.html	Cites in the first phase that the WSJ "reported" the interim results of the clinical trial, although the note acknowledges that the WSJ article quoted the UAE news agency.
14/12/20	WSJ in CRI/CGTN	El caso oolong de "la vacuna china" en Brasil tiene un fondo más profundo https://espanol.cgtn.com/n/2020-11-15/EEdBAA/el-caso-oolong-de-la-vacuna-china-en-brasil-tiene-un-fondo-mas-profundo/index.html	Quotes the WSJ as saying that it "assessed that Chinese vaccines have their peculiar advantage and will benefit hundreds of millions of people in the world."
23/12/20	WSJ in CRI/CGTN	Wall Street Journal: CoronaVac de SinoVac demostró ser efectiva en pruebas en Brasil https://espanol.cgtn.com/n/2020-12-24/EHGBAA/wall-street-journal-coronavac-de-sinovac-demostro-ser-efectiva-en-pruebas-en-brasil/index.html	Reports that the WSJ mentions the effectiveness of the Chinese vaccine, although it notes that it cites "sources involved in the development of the vaccine" in Brazil. Adds that "poorer countries have placed their hopes in China," according to the WSJ.
30/12/20	WSJ in Xinhua	Investigadores de EEUU estudian reacciones alérgicas a vacuna Pfizer-Biontech http://spanish.xinhuanet.com/2020-12/30/c_139627926.htm	Alludes to media reports, including the WSJ, that a compound in the Pfizer vaccine could cause allergic reactions. The article later quotes a scientist who admits that "I think we're just speculating."
6/1/21	Washington Post in CRI	The Washington Post: La vacunación en China es más rápida que la "Operación de Velocidad de la luz" https://espanol.cgtn.com/n/2021-01-06/EIEFcA/the-washington-post-la-	Refers to a Jan. 4 *Washington Post* article, which cites China's "national plan" as a source.

		vacunacion-en-china-es-mas-rapida-que-la-operacion-de-velocidad-de-la-luz/index.html	
15/1/21	Washington Post in CRI	Acerca de las vacunas de China contra COVID-19: datos y verdades http://espanol.cri.cn/news/china/1019/20210115/606931.html	Mentions the *Washington Post* to claim that China aims to vaccinate 50 million people before the Chinese New Year.
16/1/21	Washington Post in CGTN	Acerca de las vacunas de China contra COVID-19: datos y hechos: China aprueba con condiciones la comercialización de su vacuna contra la COVID-19 https://espanol.cgtn.com/n/2021-01-16/EIeGIA/acerca-de-las-vacunas-de-china-contra-COVID-19-datos-y-hechos-china-aprueba-con-condiciones-la-comercializacion-de-su-vacuna-contra-la-COVID-19/index.html	Mentions the *Washington Post* to claim that China aims to vaccinate 50 million people before the Chinese New Year.
26/1/21	FTin Xinhua	Presidente polaco: Demora de vacuna de Pfizer cuesta a Polonia 1.000 millones de zlotys al día http://spanish.xinhuanet.com/2021-01/26/c_139697219.htm	Alludes to the Polish president's criticism of Pfizer in an interview with the FT.

There is also a proliferation of articles disavowing existing criticisms or suspicions about the efficacy or safety of Chinese vaccines, although to counter them no scientific evidence is presented, rather arguments with a political and undoubtedly ideological bias. CGTN put it this way: "...some developed countries, due to ideological prejudices and economic interests, defame the vaccines developed by countries such as China and Russia. After seeing that Chinese vaccines have been welcomed by more and more countries, some anti-China forces have maliciously promoted the so-called 'vaccine diplomacy' and used the vaccine that saves people as a political tool."[203]

The mistrust promoted by the Chinese media for the alleged ineffectiveness and unsafety of Western vaccines, as seen above, is complemented by hostile criticism of Western countries and their media, as shown by this other article published by China Radio International (CRI): "Although the Chinese vaccine has been promoted and highly recognized in many countries, the Western media simply turned a blind eye, on the contrary, deliberately belittling or even discrediting the Chinese vaccine and politicizing it." The reason for "defaming" China would be, according to CRI, "to maximize the profits of its own vaccines in the international market" and to use "vaccines as a tool to maintain hegemony."[204]
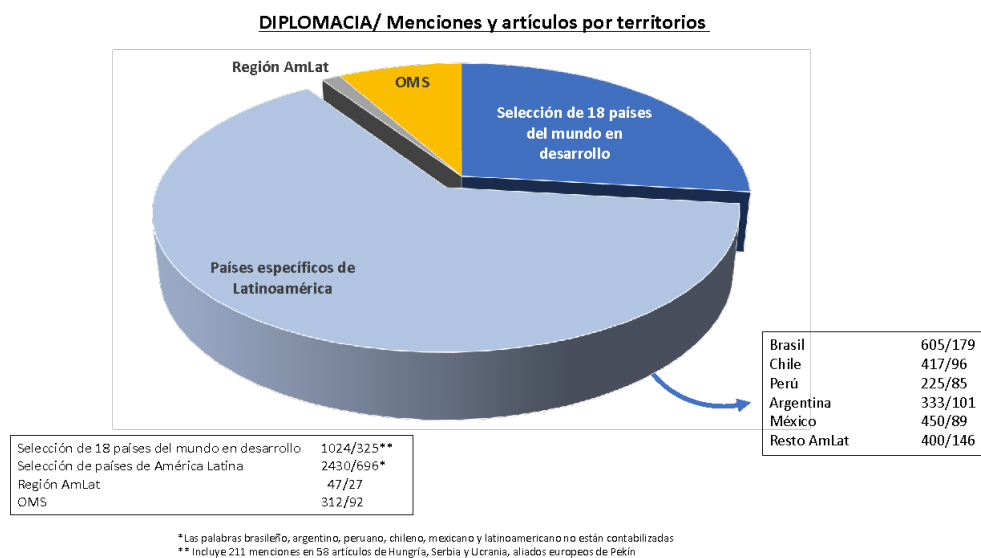
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[203]"La distribución mundial de vacunas no debería ser víctima de "Ley de Jungla," *CGTN*, March 18, 2021. Available at: https://espanol.cgtn.com/n/2021-03-18/EdEdIA/la-distribucion-mundial-de-vacunas-no-deberia-ser-victima-de-ley-de-jungla/index.html.

[204] ¿Por qué han cambiado las actitudes de algunos países occidentales hacia la vacuna china? *CRI* February 2, 2021. Available at: http://espanol.cri.cn/news/report/1017/20210202/615031.html.

Another way of legitimizing Chinese vaccines in the media is through the dissemination of the clinical trials that companies like China National Biotec Group, Sinovac, and CanSinoBio have carried out in different countries. Additionally, they have made use of the positive global response to the vaccines developed by China both in the countries hosting the trials and in other parts of the developing world that are Beijing's traditional or potential allies. These countries are joined by another group of countries that had no choice but to purchase Chinese vaccines in the face of shortages of other vaccines in world markets.

Python's analysis shows that Brazil, Chile, Turkey, Peru, Egypt, Argentina, Pakistan, UAE, and Indonesia, all countries that hosted clinical trials of Chinese biotech companies, are mentioned 3,415 times and appear in 1,007 articles. This demonstrates the importance that these trials played in the official Chinese narrative in legitimizing Chinese vaccines.

As shown below, 2,477 mentions and references to Latin American countries were recorded in 723 articles, which demonstrates the efforts of Beijing and its media to disseminate a recognizable, seductive, and adapted narrative to Latin American audiences. There are also 843 mentions in 288 articles of the rest of the developing world with which China has engaged in some form of cooperation regarding the pandemic crisis.

DIPLOMACIA/ Menciones y artículos por territorios

Brasil	605/179
Chile	417/96
Perú	225/85
Argentina	333/101
México	450/89
Resto AmLat	400/146

Selección de 18 países del mundo en desarrollo	1024/325**
Selección de países de América Latina	2430/696*
Región AmLat	47/27
OMS	312/92

*Las palabras brasileño, argentino, peruano, chileno, mexicano y latinoamericano no están contabilizadas
** Incluye 211 menciones en 58 artículos de Hungría, Serbia y Ucrania, aliados europeos de Pekín

The media coverage of Brazil, the most important country for China in Latin America and the one that merited 605 mentions in 179 articles of Chinese state media (not counting another 415 mentions with the word "Brazilian"), is striking. Reporting on COVID-19 was marked by three newsworthy events in Brazil: 1) in July 2020, Sinovac started clinical trials in Brazil with 13,000 volunteers and a local partner, the Butantan Institute; 2) studies on the efficacy of Sinovac's vaccine in that trial yielded contradictory results, raising international suspicions about its efficacy; and 3) Brazilian President Jair Bolsonaro's fierce criticism of the CoronaVac vaccine.

In general, the news published by the Chinese media focused on highlighting the positive aspects of the vaccine development in Brazil: "clinical trials without setbacks"; the Bhutanan Institute states that the vaccine "appears safe"; "Beijing affirms that Brazil trusts

Chinese vaccines"; the Brazilian regulatory body "certifies the good practices of the Chinese laboratory"; the Bhutan Institute "announces the efficacy of the CoronaVac vaccine"; "Brazilian Health Minister buys 100 million CoronaVac vaccines"; and immunization with the Chinese vaccine "brings hope to indigenous people in Brazil," are some examples of positive coverage that has shunned any controversy surrounding China's vaccine in Brazil.

Although Bolsonaro was habitually critical of China and its vaccine, questioning its efficacy and even stating that "the Brazilian people will not be anyone's guinea pig," the official Chinese press did not echo any of the Brazilian president's accusations despite the fact that, when they occurred, they made headlines in his country and in the rest of the world. On the other hand, it did report Bolsonaro's public thanks to Beijing after the shipment of raw material for the vaccines, although even then it did not refer to the criticisms made earlier by the Brazilian politician.[205] This is a good example of the commitment of the state media to disseminate Beijing's political interests instead of reflecting the facts reliably.

The controversy did not merit in-depth coverage even after it was announced that the efficacy of the Sinovac vaccine barely exceeded 50 percent, at the threshold of what is admissible by the WHO. Only two news items addressed the issue: one, to relate the results ("CoronaVac vaccine registers 50.38 percent overall efficacy in Brazil"); and another, to headline that "reports of less than 50 percent efficacy of the Sinovac vaccine are erroneous."[206] After referring to the low efficacy, the news warned that "according to the general director of Sinovac, the reports about a lower efficacy ratio are erroneous." The information did not provide any data as evidence to confirm the statement.

In November 2020, the single CGTN story covering the suspension of the Sinovac clinical trial in Brazil following the death of a volunteer created a conspiracy theory that "some Brazilian politicians linked the death to the quality of the Chinese vaccine" in an unsigned commentary. It warned that "scientific problems were seriously politicized" and considered it a dubious coincidence that the death occurred just as Pfizer announced that its vaccine had an efficacy of over 90 percent. After alluding to "hidden objectives," it concluded that "several Western media outlets were united in attacking the safety of the Chinese vaccine."[207]

In addition, a detailed analysis of its content shows that the developing world and, within it, Latin America, is a priority target for the Chinese state media. An example of this is the Xinhua headline that presents China as the main hope for the region: "Chinese vaccines bring hope to Latin America in the face of unprecedented global moral test."

[205] "Bolsonaro agradece a China aprobación de enviar materia prima para vacunas contra la COVID-19," *Hinhuanet*, January 26, 2021. Available at: http://spanish.xinhuanet.com/2021-01/26/c_139698609.htm.

[206] "Los informes acerca de una eficacia inferior al 50 % de la vacuna de Sinovac, son erróneos," *CGTN*, January 18, 2021. Available at: ttps://espanol.cgtn.com/n/2021-01-18/EIfdAA/los-informes-acerca-de-una-eficacia-inferior-al-50-por-ciento-de-la-vacuna-de-sinovac-son-erroneos/index.html.

[207] "El caso oolong de"la vacuna china" en Brasil tiene un fondo más profundo," *CGTN* en español, November 15, 2021. Available at: https://espanol.cgtn.com/n/2020-11-15/EEdBAA/el-caso-oolong-de-la-vacuna-china-en-brasil-tiene-un-fondo-mas-profundo/index.html.

Moreover, "To meet the pressing need of LAC countries in combating the pandemic, China's assistance not only demonstrates its long-term friendship and solidarity with the region, but also represents its commitment to making vaccines a global public good."[208]

Also detectable in the official narratives are all the elements of the Chinese regime's diplomatic propaganda, which aims to present Beijing as a responsible international actor, as the champion of the developing world vis-à-vis Western countries, and as a budding global power whose development model has shown its strengths and effectiveness during the COVID-19 crisis.

A special section in the Iberoamerican section of Xinhua, called, "China fights against epidemic of new coronavirus" (sic), is a perfect synthesis of the propagandistic undertones that the Chinese media has aimed at the developing world.[209] Practically all of the 94 articles published in the "International Comments" section follow this pattern, just as the terminology and political and diplomatic slogans of the regime are also strongly embedded in the information published in the rest of the state media.
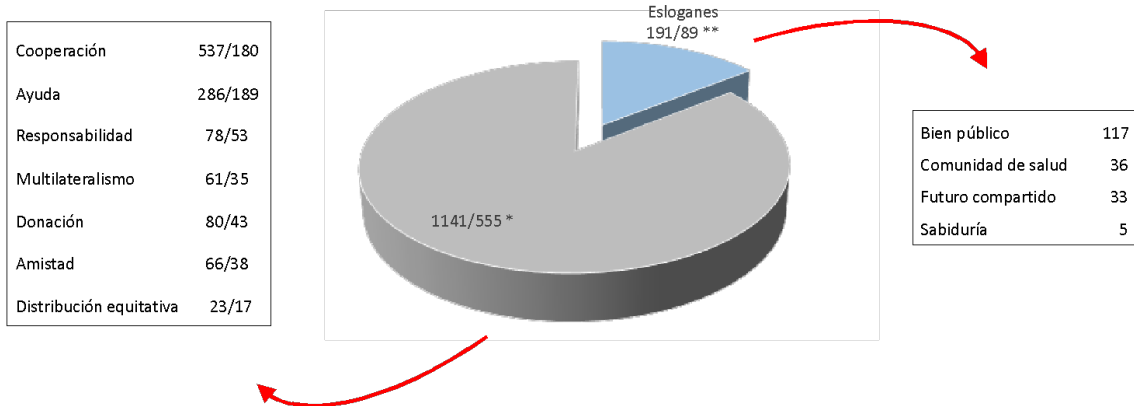
The most important diplomatically and ideologically charged word used in the contents is "cooperación." The Python tool detects (Figure 7) this word's mention 537 times in 180 articles, in addition to the fact that on 90 occasions this term is included in the headline or appears in the first paragraph of the news item (Figure 8). In addition to "cooperación," the news items are also filled with other words and slogans that are part of the rhetorical repertoire of the Chinese government's diplomatic language. Among others, these words include "amistad," "ayuda," "multilateralismo," "responsabilidad," and "donaciones," along with official slogans such as "bien público" ("public good"), "comunidad de salud" ("health community"), "futuro compartido para la humanidad" ("shared future for humanity"), or "sabiduría china" ("Chinese wisdom"). This terminology is used by Beijing to deploy its diplomatic discourse and is repeated time after time in the inventory of articles: 1,332 mentions in 644 articles, of which 175 appear in a prominent place (the headline or in the first six sentences of the article).
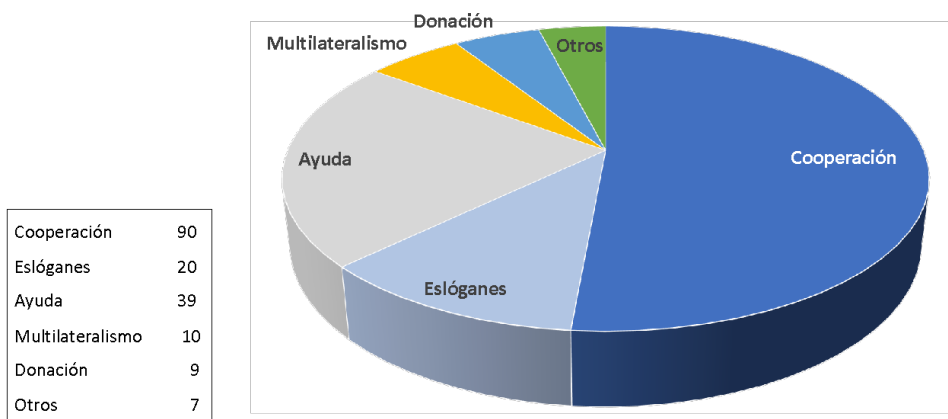
[208]"Comentario: Vacunas chinas traen esperanza a América Latina ante prueba moral mundial sin precedentes," *Xinhua Español,* March 8, 2021. Available at: http://spanish.xinhuanet.com/2021-03/08/c_139792707.htm.

[209] "Comentarios Internacionales," *Xinhua News Agency.* Available at: http://spanish.xinhuanet.com/temas/2020coronavirus/comentario.htm.

DIPLOMACIA/ Palabras clave asociadas por menciones y número de artículos

Cooperación	537/180
Ayuda	286/189
Responsabilidad	78/53
Multilateralismo	61/35
Donación	80/43
Amistad	66/38
Distribución equitativa	23/17

Esloganes
191/89 **

1141/555 *

Bien público	117
Comunidad de salud	36
Futuro compartido	33
Sabiduría	5

DIPLOMACIA/Número de menciones en titular o primeras 6 frases

Cooperación	90
Eslóganes	20
Ayuda	39
Multilateralismo	10
Donación	9
Otros	7

Donación
Multilateralismo
Otros
Ayuda
Cooperación
Eslóganes

The use of these words that coincide with the diplomatic rhetoric employed by the Chinese government translates into headlines that are clearly ideologically biased, as well as propagandistic, including examples that present China as an "example in human rights" for the mere act of protecting life during the pandemic. A selection of these headlines follows:

Cooperation
Latin American academics reflect on the impact of the pandemic in the region and opportunities for cooperation with China
China places itself "at the forefront of global cooperation," says Argentine researcher

China and Indonesia promise COVID-19 vaccine cooperation and major economic projects
China and Africa face urgent need to strengthen cooperation against COVID-19: Chinese Foreign Minister
China is fulfilling its commitment to the world with new COVID-19 vaccine
Increased cooperation on vaccines between China and the developing world
Cooperation between China and Latin America advances despite the pandemic
Chinese vaccines bring hope to Latin America in the face of unprecedented global moral test

Chinese model
China sets example in human rights by protecting life during pandemic, expert says
China sets example for other countries in handling COVID-19, Namibia minister says
Latin America should follow Chinese strategy to alleviate collapse due to COVID-19, says sociologist Dieterich
China's open book on fighting COVID-19 inspires the world
China deserves credit for protecting human rights in fight against the epidemic
China's solutions to global challenges in a troubled age

Attacks on the West
Vaccine hoarding by Western countries is an unjust act that undermines global solidarity
The world was shocked by the U.S.sabotage of global cooperation against COVID-19
Vaccine nationalism turns off the light at the end of the tunnel
WHO Chief warns of "Catastrophic Moral Failure" in COVID-19 vaccine deployment
Concern grows over global disparity in access to COVID-19 vaccine

Legitimation/Vaccines
Vaccination against COVID-19 advances in Latin America
Chinese vaccines are well received in Latin America
Turkish President receives COVID-19 vaccine
Indonesian President Receives First Injection of Chinese COVID-19 Vaccine
Turkish Health Minister receives first dose of Chinese vaccine ahead of national campaign
Serbia approves use of Chinese Sinopharm vaccine
Serbian Health Minister receives Sinopharm vaccine from China
They trust China: they "take the initiative" to receive the vaccines against COVID-19 produced by China
Diplomatic envoys from various countries congratulate China on advances in the vaccine against COVID-19

China Leading the Way in Global COVID-19 Vaccine Development
World leaders receive COVID-19 vaccines developed by China
Global Response to China-Developed COVID-19 Vaccines

Friendship/Support
China's "solidarity" with Latin America highlighted amid pandemic
Defeating COVID-19 in solidarity for the health of all
Beijing to donate shipment of COVID-19 vaccines to Manila
China to supply Myanmar with medical assistance and vaccines
China to donate 300,000 doses of Sinopharm vaccine to Sri Lanka
China promotes fair distribution of global vaccines
G20 Summit: Xi Jinping Says China Will Help Developing Countries Get Vaccines
"Providing Help When Others Need It Most" Shows China's Great Power Responsibility

Slogans/Diplomacy
Commentary: shaking hands to build a common health community for humanity
China practices and defends multilateralism
China Develops COVID-19 Vaccines as a Global Public Good
Chinese wisdom brings benefits to the world
China's certainty makes the world safer

A representative example of the Chinese state media's ability to shape facts was the media's treatment given to China's accession to the so-called "COVID-19 Vaccine Implementation Plan" (COVAX). When it formally joined on October 8, 2020, a Chinese foreign spokeswoman told a press conference that this was an important step by China "to uphold the concept of a shared health community for humanity and fulfill its commitment to contribute to making COVID-19 vaccines a global public good." Shee also added that "China solemnly pledges that once vaccine research and development is completed and vaccines are put into use, it will offer them on a priority basis to developing countries as a global public good."[210]

On October 23, 2020, CGTN publicized the above narrative in an article titled, "China Promotes Fair Distribution of Global Vaccines."[211] It stated that, "as the country with the highest level of vaccine research and development in the world, China has four new COVID-19 vaccines in Phase III clinical trials and has sufficient production and self-supply capacity," presenting China as a responsible, generous, and committed power in

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[210] "La Portavoz del Ministerio de Relaciones Exteriores, Hua Chunying, Responde a la Prensa sobre la Entrada de China en el "Plan de Implementación de las Vacunas Contra la COVID-19," Ministry of Foreign Affairs of the People's Republic of China, October 9, 2020. Available at: https://www.fmprc.gov.cn/esp/xwfw/fyrth/t1822989.shtml

[211] "China promueve la distribución justa de vacunas mundiales," *CGTN en español, October 23, 2020. Available at:* https://espanol.cgtn.com/n/2020-10-23/EDGfEA/china-promueve-la-distribucion-justa-de-vacunas-mundiales/index.html.

the interest of the developing world. Therefore, the headline of the news item presented Beijing's decision as a milestone for promoting the fair distribution of vaccines.

However, it omitted a crucial part: Beijing resisted for months to join COVAX[212] and that, three months before the Asian country joined the WHO initiative, 165 countries, including the European bloc, had already done so.[213] Despite joining at the last minute and almost reluctantly, the Chinese media conveyed the opposite message of a supportive and committed China in favor of an equitable distribution of vaccines. In other words, China was determined to exert a message of strong leadership in support of the developing world. It reinforced this message with the announcement that it would offer a USD $1 billion loan to support Latin American countries' access to vaccines.[214]

Another article (published by Xinhua) illustrates the type of message that the Chinese media disseminate— the narrative of China's responsible and generous support of the developing world: "China's commitment and action to make its vaccines against COVID-19 a global public good will help strengthen 'the weakest link' in the battle against the pandemic."[215] Another article in *People Online* praises "the responsibility of a great power" like China for "providing help when others need it most" and for its "selfless contribution against the pandemic," while criticizing that "some high-income countries only care about stockpiling vaccines for themselves" and allude to vaccine diplomacy "in order to discredit China."[216]

The flow of propaganda reflects the effort by Chinese authorities to seek closer ties with Latin America and the developing world, which Beijing perceives as allies. It is a seductive and perfectly calculated narrative aimed specifically at that audience, portraying China as the solution to current and future challenges: the pandemic crisis, poverty eradication, and economic development. All of this is wrapped in a lexicon of friendship, cooperation, and "mutual respect" around a "shared future for humanity" with the Belt and Road project as a backdrop. It is a narrative that promotes, not always subliminally, the superiority of the Chinese political and development model and that "opens a new path for the modernization of other developing countries."[217]

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[212] "More than 150 countries engaged in COVID-19 vaccine global access facility," *World Health Organization,* 15 July, 2021. Available at: . https://www.who.int/news/item/15-07-2020-more-than-150-countries-engaged-in-COVID-19-vaccine-global-access-facility.
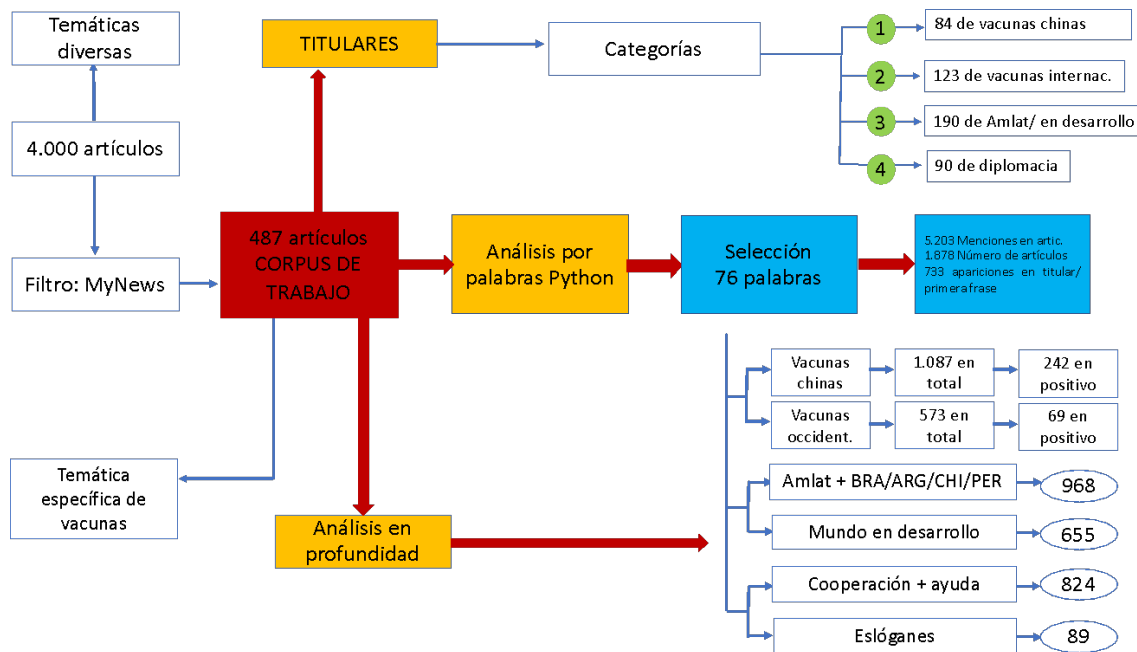
[213] Hemant Adlakha,"Did China Join COVAX to Counter or Promote Vaccine Nationalism?." *The Diplomat, October 23, 2021. Available at:* https://thediplomat.com/2020/10/did-china-join-covax-to-counter-or-promote-vaccine-nationalism/

[214] "China ofrece 1.000 millones de dólares a Latinoamérica para el acceso a la vacuna COVID-19," *Reuters*, July 23, 2020. Availale at: https://cn.reuters.com/article/salud-coronavirus-latam-china-idESKCN24O0IK.

[215] "Enfoque: Vacunas chinas ayudan a fortalecer 'el eslabón más débil' en la lucha contra la COVID-19," *Xinhua Español,* March 11, 2021. Available at: http://spanish.xinhuanet.com/2021-03/11/c_139803639.htm.

[216] "Observación internacional: 'Proporcionar ayuda cuando otros más lo necesitan' muestra la responsabilidad de una gran potencia por parte de China," *People's Daily (Spanish),* March 24, 2021. Available at: http://spanish.peopledaily.com.cn/n3/2021/0324/c31619-9831976.html.

[217] Phrase mentioned by Xi Jinping in a 2017 speech.

Temáticas diversas

4.000 artículos

Filtro: MyNews

TITULARES → Categorías

1 84 de vacunas chinas
2 123 de vacunas internac.
3 190 de Amlat/ en desarrollo
4 90 de diplomacia

487 artículos CORPUS DE TRABAJO → Análisis por palabras Python → Selección 76 palabras → 5.203 Menciones en artic. 1.878 Número de artículos 733 apariciones en titular/ primera frase

Vacunas chinas → 1.087 en total → 242 en positivo
Vacunas occident. → 573 en total → 69 en positivo

Amlat + BRA/ARG/CHI/PER → 968
Mundo en desarrollo → 655
Cooperación + ayuda → 824
Eslóganes → 89

Temática específica de vacunas

Análisis en profundidad

Poverty

On December 3, 2020, Chinese President Xi Jinping announced that China achieved its goal of eradicating poverty and achieved "a significant victory that impresses the world."[218] After months in which the dominant narrative was the development of Chinese vaccines, a change of focus was evident on the part of the Chinese media. The new track highlighted China's achievements in the fight against poverty and the successes of the CCP in different fields, a narrative that leads to the centenary of its founding in July 2021. Both served to support the idea of the superiority of the Chinese political and development model.

To identify the elements of these propagandistic narratives, 633 articles published in four Chinese official media sources between November 2020 and July 2021 were pre-selected. In this inventory, words linked to the lexical family "pobreza" ("pobreza," "pobreza absoluta" y "pobreza extrema"—"poverty," "absolute poverty," and "extreme poverty") are mentioned a total of 1,821 times in 431 articles, of which 807 are cited in the initial part of the article (either in the headline or in the following six sentences)

Words from a second lexical family ("batalla contra la pobreza," "batalla contra la pobreza extrema," "eliminación de la pobreza," "eliminación de la pobreza absoluta," "eliminación de la pobreza extrema," "erradicación de la pobreza," "erradicación de la pobreza absoluta," "erradicación de la pobreza extrema," "lucha contra la pobreza" y "lucha contra la pobreza extrema"—"battle against poverty," "battle against extreme

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[218] "Xi anuncia gran victoria en alivio de pobreza," *People's Daily (Spanish),* April 8, 2021. Available at: http://spanish.peopledaily.com.cn/n3/2020/1204/c31621-9795583.html.

poverty," "elimination of poverty," "elimination of absolute poverty," "elimination of extreme poverty," "eradication of poverty," "eradication of absolute poverty," "eradication of extreme poverty," "fight against poverty," and "fight against extreme poverty") are cited a further 378 times in 238 articles, 179 of which are carried in the headline or in the first six sentences of the article. This shows the prevalence of the poverty theme in the inventory of articles.

Figura 9
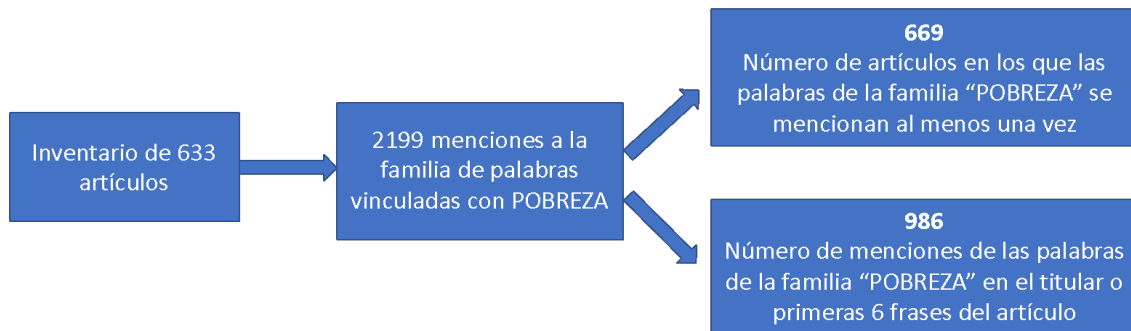
(Figure 9)

In turn, a triumphalist tone can be deduced from the words used in the narrative on the fight against poverty, as evidenced by the repeated use of words such as "success," "achievement," "victory," "complete victory," "milestone," "feat," "miracle," "sacrifice," or "overcoming." The above words are mentioned 1,233 times in 672 articles, of which 856 are located at the beginning of the articles. According to the official discourse, 100 million Chinese have been lifted out of absolute poverty since 2021.

However, despite the weight of these terms and the emphatic nature of the Chinese media in spreading this triumphalist message, there is no lack of those who criticize the completeness of that claim. Without denying China's efforts and successes in alleviating poverty in the last four decades, there is a partisan use of the data made by Beijing to defend the indisputable idea that it has eradicated extreme poverty in its territory. By using inaccurate or controversial data, the Chinese regime can then defend a powerful idea (the triumph over poverty), which in turn serves to disseminate other narratives (linking this achievement to the CCP and the superiority of the Chinese model), as will be explained below.

The tactic of the Chinese government and official media is to consider extreme poverty in China as those living on less than USD $2.25 a day, which is more than the World Bank's USD $1.90 a day, but well below the USD $5.50 a day that the same institution sets to measure absolute poverty in upper-middle income countries like China. In other words, to set the extreme poverty line in its country, Beijing uses a scale that would be appropriate for low-income countries, such as Ethiopia, but not for a country like China, which is 10 times richer. According to some experts, if Beijing had set the criterion that corresponds

to its relative wealth, it would be considered that about 13 percent of its population, or about 200 million people, would be living in extreme poverty.[219]

Moreover, Chinese Premier Li Keqiang himself declared in May 2020 that 600 million people in China live on 1,000 yuan a month,[220] or USD $5.13 a day, implying that 42.8 percent of the population would be living below the absolute poverty line if Beijing had set the scale recommended by the World Bank for an upper-middle-income country like China. Had this criterion been observed, the official media would not have been able to disseminate the idea of China's "complete victory" in eradicating poverty because this "victory," with the data in hand, would not have occurred. This explains why this key criterion is ignored in the media coverage. The construction of this narrative can only be sustained because of this omission.

This example of disinformation is widespread, as it allows the official media to disseminate the idea that the CCP is the inspirer and architect of the achievement of poverty eradication, an argument that is repeatedly insisted upon in the context of the 100th anniversary of the founding of the CCP, in addition to being one of the goals set by Xi Jinping when he took power in 2012. Thus, the Chinese press explains that one of the reasons behind this "miracle" is "adherence to the leadership of the Communist Party of China, to the ideology of people-centered development and to the advantages of the socialist system of power concentration."[221]

The official narrative further proclaims that the common basis for winning the war on both COVID-19 and poverty "is the CCP's governance structure and organizational capacity," as well as the "party-led governance system."[222] From the first day of its founding, the CCP "has made the pursuit of happiness for the Chinese people and the revitalization of the Chinese nation its aspiration and mission."[223] When performing the exercise of checking the linkage of words that allude to success in the fight against poverty and terminology that identifies the CCP or its leaders, does Python show that the CCP claims credit for the achievement?

The data is conclusive. The words "achievement," "success," "struggle," "relief," "poverty," "miracle," "victory," "feat," and "sacrifice" are mentioned a total of 1,109 times in the same sentence as "CCP," "Communist Party," "Xi Jinping," "Party," or

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[219] Ruwitch, John. "What China's 'Total Victory' Over Extreme Poverty Looks Like In Actuality," *NPR*, March 5, 2021. https://www.npr.org/2021/03/05/974173482/what-chinas-total-victory-over-extreme-poverty-looks-like-in-actuality?t=1630315535475.

[220] Li Qiaoyi, "600m with $140 monthly income worries top," *Global Times*, May 29, 2021. Available at: https://www.globaltimes.cn/content/1189968.shtml.

[221] Robert Lawrence Kuhn "¿Por qué una "sociedad modestamente acomodada" requiere de la erradicación de la pobreza?," *CGTN*, February 26, 2021. Available at: ttps://espanol.cgtn.com/n/2021-02-26/EbcfcA/por-que-una-sociedad-modestamente-acomodada-requiere-de-la-erradicacion-de-la-pobreza/index.html.

[222] "Desvela el código del milagro de la eliminación de pobreza de China," *CRI, February 26, 2021. Available at:* http://espanol.cri.cn/news/report/1017/20210226/626282.html.

[223] "Resolver la pobreza absoluta, un gran y glorioso logro de la nación china," *Spanish People*, May 7, 2021. Available at: http://spanish.peopledaily.com.cn/n3/2021/0705/c31621-9868454.html.
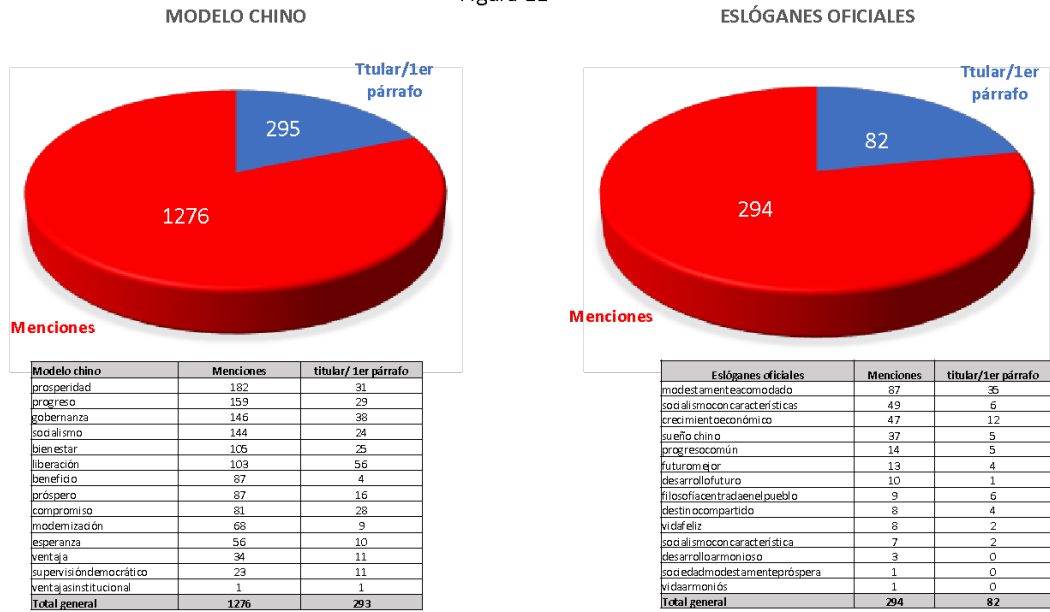
"communist," which comes to suggest that the ruling party in China takes credit for merit in the fight against poverty. The association between success/achievement and the CCP/XI Jinping was included in the headline or in the first six sentences of the articles on 349 occasions, which confirms its prominent location in the published news.

Figura 10
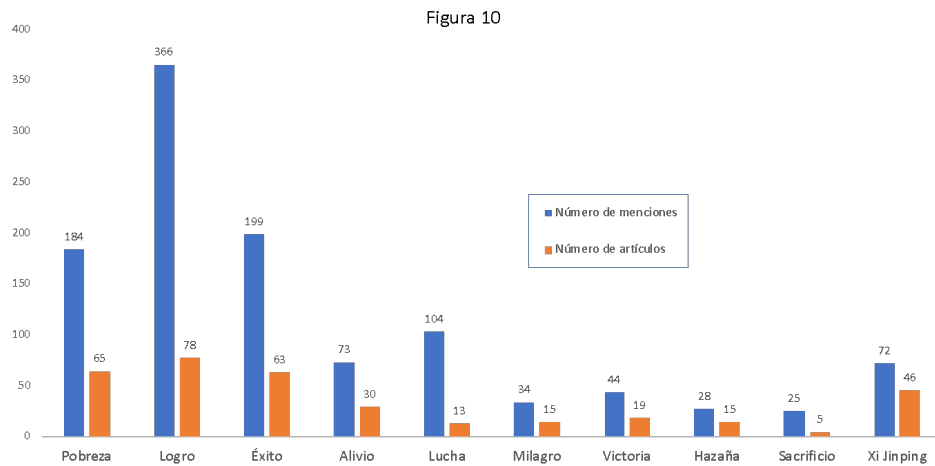
(Figure 10)

Presenting the CCP as an exemplary actor in managing the COVID-19 pandemic and eradicating poverty serves as a springboard for extolling the virtues of the Chinese political system under CCP leadership. This is demonstrated by a category of 14 words associated with good governance and the effectiveness of the Chinese development model that are cited on 1,276 occasions, 293 of them in the initial and most prominent part of the news. At the same time, 14 expressions such as "sociedad modestamente acomodada," "sueño chino," o "socialismo con características chinas" ("modestly well-off society," "Chinese dream," or "socialism with Chinese characteristics") are mentioned 294 times, 82 of them in the prominent part of the articles, which reproduce official propaganda slogans linked to successes in the fight against poverty.

Figura 11

Modelo chino	Menciones	titular/ 1er párrafo
prosperidad	182	31
progreso	159	29
gobernanza	146	38
socialismo	144	24
bienestar	105	25
liberación	103	56
beneficio	87	4
próspero	87	16
compromiso	81	28
modernización	68	9
esperanza	56	10
ventaja	34	11
supervisióndemocrático	23	11
ventajasinstitucional	1	1
Total general	1276	293

Eslóganes oficiales	Menciones	titular/1er párrafo
modestamenteacomodado	87	35
socialismoconcaracterísticas	49	6
crecimientoeconómico	47	12
sueño chino	37	5
progresocomún	14	5
futuromejor	13	4
desarrollofuturo	10	1
filosofíacentradaenelpueblo	9	6
destinocompartido	8	4
vidafeliz	8	2
socialismoconcaracterística	7	2
desarrolloarmonioso	3	0
sociedadmodestamentepróspera	1	0
vidaarmoniós	1	0
Total general	294	82

(Figure 11)

In addition to praising the political system's role in promoting China's development, the media takes the opportunity to openly disassociate themselves from the Western democratic model or to criticize "foreign politicians who try to sow discord between the CCP and the Chinese people."[224] "Not so long ago," continues another article, "'learning from the West' was a way for many developing countries to pursue modernization. But China's development path shows that modernization does not mean Westernization." Therefore, the CCP "will never accept the preaching of arrogant masters."[225]

In response to "why Western political theories cannot explain the CCP's success," the Chinese narrative answers that "the CCP is substantially different from Western-style political parties," which is why China "has established a democracy that suits the country itself" and not the "model of democracy practiced in the West."[226] In its attempt to disseminate an alternative interpretation of the concept of democracy that would allow it to fit within its communist system, the Chinese regime has coined terms such as "full process democracy," which attempts to disprove or soften—perhaps subliminally—the authoritarianism associated with the Chinese regime.

The same tactic of terminological confusion is used in relation to human rights. Traditionally a weak link in the regime's official narrative, Beijing has always defended the theory of cultural relativism, which asserts that principles are only valid in their own

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[224] "Liderazgo del PCCh es garantía fundamental para alivio de pobreza, según portavoz de cancillería china," *Xinhua Español,* December 17, 2020. Available at: http://spanish.xinhuanet.com/2020-12/17/c_139598171.htm.

[225] "El PCCh no necesita "maestro" arrogante," *China Radio International,* July 5, 2021. Available at: http://espanol.cri.cn/news/report/1017/20210705/684397.html.

[226] "Por qué las teorías políticas occidentales no pueden explicar el éxito del PCCh," *Xinhuan Español,* June 29, 2021. Available at: http://spanish.xinhuanet.com/2021-06/29/c_1310033918.htm.

cultural context. This means that the communist doctrine denies the universality of human rights and points out that cultural traditions determine the scope of civil and political rights enjoyed by individuals in a society. This argument is used to spread the idea that human rights are therefore a Western conception imposed on the rest of the world. This is a political tool the Chinese government uses to impose its hegemony.

However, amid perceived successes in the fight against pandemics, in poverty alleviation, or in China's own modernization, Beijing is now promoting an alternative and sui generis version of the concept of human rights. This practice is illustrated by the inventory of articles included in this study that presents Beijing's alleged achievements in the fight against poverty as "the best practice for the protection of human rights."[227] Similarly, "China's achievements in poverty reduction are internationally recognized as a brilliant response to the protection of human rights for survival and development."[228]

Thanks to the CCP's alleged good governance and effective management, the theory that human rights in China are better protected is an "important contribution of China to the global cause of human rights." In contrast to the traditional rejection of the universality of human rights, the idea of the "diversity" of the concept, which consists of applying "the principle of universality of human rights to China's national conditions," is now gaining ground. For a hundred years, Beijing has always "put people first, exercising the principle of universality of human rights in the context of national conditions."[229] This includes— the article continues—"the rights to livelihood and development as the primary and basic human rights," in which "living a happy life is the supreme human right."[230]

In this context, the U.S. and the rest of the Western world thus become regular targets of criticism in Chinese official media narratives: "In the face of the slander of some Western anti-China forces, China's remarkable human rights achievements are the most powerful counterattack. Over the past 100 years, the CCP has successfully embarked on a path of human rights development that suits China's national conditions. This fully proves that the definition of human rights should not be monopolized by the West."[231]   With this

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[227]"Eliminar la pobreza absoluta en China es la mejor práctica de derechos humanos," *CGTN,* April 7, 2021. Available at: https://espanol.cgtn.com/n/2021-04-07/EeaeEA/eliminar-la-pobreza-absoluta-en-china-es-la-mejor-practica-de-derechos-humanos/index.html.

[228] "Pregúntale a China: ¿Qué contribución ha hecho China a la causa de la reducción de la pobreza en el mundo?," *CGTN,* March 7, 2021. Available at: https://espanol.cgtn.com/n/2021-03-07/EcHIIA/preguntale-a-china-que-contribucion-ha-hecho-china-a-la-causa-de-la-reduccion-de-la-pobreza-en-el-mundo/index.html.

[229] "PCCh agrega diversidad al concepto de derechos humanos, según libro blanco," *Xinhua Español,* June 24, 2021. Available at: http://spanish.xinhuanet.com/2021-06/24/c_1310025287.htm.

[230] "ENFOQUE: China publica libro blanco sobre práctica del PCCh en protección de derechos humanos," *Xinhua Español,* June 25, 2021. Available at: http://spanish.xinhuanet.com/2021-06/25/c_1310026404.htm.

[231]"¿Cómo ha creado el PCCh el milagro del desarrollo de los derechos humanos?," *CGTN,* June 25, 2021. Available at: https://espanol.cgtn.com/n/2021-06-25/FEAcEA/como-ha-creado-el-pcch-milagro-del-desarrollo-de-los-derechos-humanos/index.html.

approach, China questions both the role of the West and the superiority of democratic models.[232]

Thus, there is a proliferation of headlines, news, and messages inviting Latin America to consider China "as a model"[233] and encouraging Latin American politicians to take inspiration from "the wisdom and experience behind China's enormous achievements."[234] As in the case of vaccines, in relation to the issue of poverty, the Chinese media also wraps its rhetoric around terms such as "cooperation," "contribution," "example," "support," or "exchange," which seem to be aimed at seducing audiences in Latin America and the rest of the developing world (Figure 12).

Figura 12
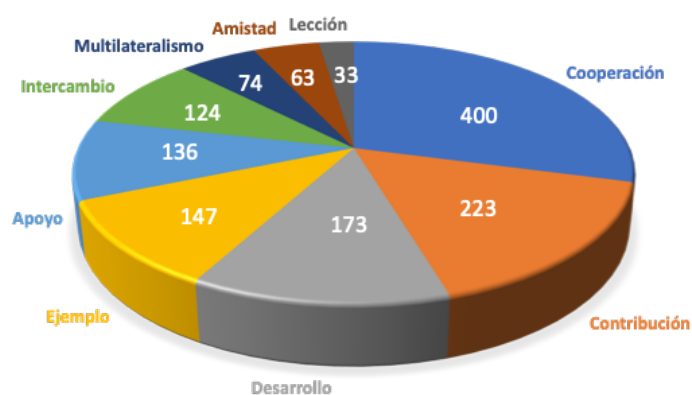
(Figure 12)

The actors of Chinese propaganda: "allies"

Introduction

By monitoring the Twitter and, to a lesser extent, Facebook networks (for those who have not registered a Twitter account), a map has been drawn of active users who inform,

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[232] "Lo que China celebra en el centenario del Partido Comunista," *CGTN,* June 28, 2021. Available at: https://espanol.cgtn.com/n/2021-06-28/FEDJAA/lo-que-china-celebra-en-el-centenario-del-partido-comunista/index.html.

[233] "ENTREVISTA: Planes de erradicación de pobreza de China pueden servir de modelo para Latinoamérica, asegura experto chileno," *Xinhua Español,* December 4, 2020. Available at: http://spanish.xinhuanet.com/2020-12/04/c_139562983.htm.

[234] "ESPECIAL: Chayote, el cultivo que es ejemplo de la batalla de China contra la pobreza," *Xinhua Español,* November 19, 2020. Available at: http://spanish.xinhuanet.com/2020-11/19/c_139527786.htm.

publish, or share information related to China, either as speakers of Beijing's official interests or as individuals or institutions with interests in China. For the purposes of this study, these users have been defined as "disseminators" or "allies" of China, i.e., partisan voices on the Internet—in many cases also outside it—who replicate, share, support, or disseminate their own or other people's content that benefits China's image in those countries and often appears local media as well.

The profiles of these users mainly consist of personalities or institutions with business, political, academic, diplomatic, personal, or other links with China. Amid the existing deficit of knowledge in Latin America, many of these disseminators stand as authoritative voices in their countries as they share an exclusive knowledge about China thanks to their training or academic or professional experience. A good number of them have been part of the foreign elite recruitment program promoted and financed by the Beijing government to attract influential people from different social and political spheres.

In the three countries included in this study, 54 users have been identified that meet the profile of disseminating and, to a certain extent, monopolizing the discourse on China in Argentina, Chile, and Peru. Of these, 23 are institutional user accounts and the remaining 31 correspond to individual users. For the analysis of the role played by these users in the dissemination of official Chinese narratives and propaganda on social networks, all of their tweets have been downloaded from January 1, 2020, which coincides with the first period of the COVID-19 crisis, until July 15, 2021, shortly after the centenary of the founding of the CCP.

Two tools were used interchangeably for downloading: 1) Twitonomy for Twitter accounts and 2) FanpageKarma for Facebook accounts and for those Twitter accounts that exceed the download maximum of 3,200 tweets. To create the database, the content of the tweets was dumped into various Excel spreadsheets for analysis with filters, one by user and the other by topics and words. This exercise allowed for a quantitative analysis of user activity as well as a qualitative analysis on the use, frequency, and content of official Chinese narratives by the users.

Description and profiles

Regarding the makeup of the users, 54 user accounts have been identified in Argentina, Chile, and Peru. Suffice it to say that the links of most of them with China, its institutions, and authorities are easily traceable, mostly because they have participated in activities or programs of the Chinese government and the CCP within their strategies of incisive, or sharp power.

Analysis of Twitter Accounts

For the analysis, all the tweets and posts of the monitored users in Argentina, Chile, and Peru between January 2020 and July 2021 were downloaded. For the Twitter accounts, the retweets and the likes received; and, for Facebook accounts, the number of posts, likes, comments, and the times the publication was shared have been recorded. The data were excluded from this report to protect the privacy of individual users.

54 users published 144,682 tweets and posts on Twitter and Facebook during the analysis period. Of all the above messages, 13,438 contained the word "China," i.e. 9.2 percent of the total. This filter makes it possible to assess the importance of the topic "China" for users and whether it is predominant in their communication on social networks. Therefore, the fact that one out of 10 messages is dedicated to China, which is a significant percentage, shows that China is not the dominant theme even for users who are interested in and have above-average knowledge of China in these countries.

However, the fact that the network activity of some of these users does not always prioritize China-related issues does not mean that their work in disseminating official narratives does not have a considerable reach. For starters, the 54 users total 662,478 (+followers in Peru), is not an inconsiderable figure. But, above all, the relevance of these disseminators, especially those who have no formal links with the Chinese regime (as opposed to Chinese embassies or Confucius Institutes), is that their audiences can perceive a sense of independence in their messages. In disseminating their account of China, it is not always obvious to the recipients of their messages how close many of these users are to Beijing.

A second deduction from the analysis is that, as might be expected, the main subject matter of the users is the COVID-19 pandemic. Two out of three tweets address this topic, often to praise the Chinese government's management or to report more generically on COVID without entering into value judgments. However, it is striking that users did not address the controversial topic of vaccines in depth. Given that the efficacy and safety of vaccines was the main issue in the world news during the months of the study, it is striking that the institutions and individuals in Argentina, Chile and Peru that published the most about China chose to keep a low profile or to avoid the issue.

This controversy, as we have seen in the previous section, caused a great stir for months in the media. However, of the total of 144,682 tweets published by the 54 accounts of the disclosers, only 865 literally and specifically include the terms "vacuna china," "Sinopharm," "Sinovac" or "Cansino," as shown in the graphs. And the most surprising thing: of these 865 tweets, only 39 expressly include the words "eficacia," "eficaz," "efectividad," "segura" and "seguridad," which is clear evidence that it was not a topic of interest to delve into. As if that were not enough, of these 39 tweets that do refer to the efficacy and safety of Chinese vaccines, 19 were published by the embassies of China itself or by the official magazine China Hoy de Perú.

Such inconsequentiality contrasts with the fact that, due to their proximity to China or its authorities, several users do come out frequently in defense of the Asian country in any controversy that arises, while also praising the performance and "achievements" of the Communist Party or criticizing the U.S. and the Western world by comparison. However, in the worst global crisis in decades, with China in the eye of the storm for its

responsibility in the pandemic and with reasonable doubts about vaccines that were widely used in Chile and Peru, users were prudent enough to remain largely silent.
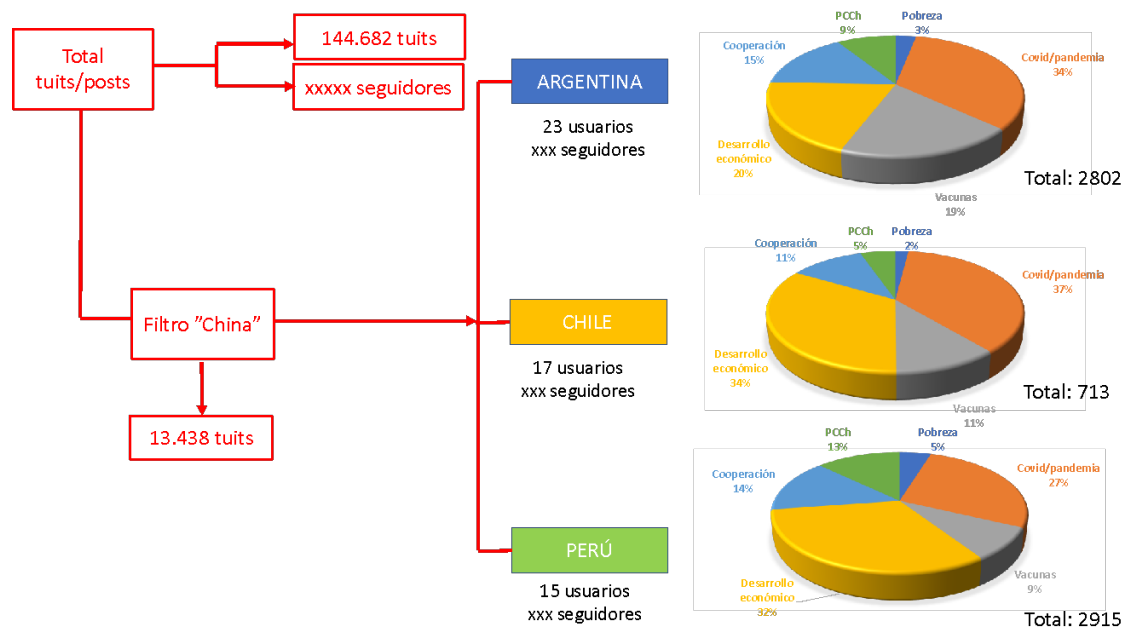
(Figure 14)

Therefore, what narratives did these users disseminate in the 13,437 specific tweets in which the word "China"[235] is mentioned? Apart from the two recurring approaches, i.e., presenting China as a great economic power and describing its role in managing the pandemic, the inclination to disseminate official narratives stands out: those presenting the Communist Party as the architect of all China's achievements, that of its alleged success in alleviating extreme poverty, or that of showing Beijing as a reference in the developing world thanks to its cooperation, donations and aid. These are the same official narratives that make their way into the Chinese media, described in previous sections of this paper.

This is not a restrained or cautious positioning. On the contrary, @ChileAlerta published for example that "100 years of communist progress" have allowed China to "lift 900 million people out of poverty." In terms of Chinese donations, he went further: "China helps Palestine! While the U.S. and Israel murder them, massacre them and rape their children daily, China donates 100,000 Sinopharm vaccines to Palestine."[236] Chilean academic Ignacio Araya Heredia, disseminating paid content from China Media Group, considered in a tweet that "the ruling party in China has always adhered to the ideology of people-centered development and demonstrated the concept of the supremacy of the people in government." 100 percent official rhetoric.

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[235] Applying the filter with the word "China" to the 144,682 tweets posted by the 54 users between January 2020 and July 2021, yields a total of 13,438 tweets specifically linked to China.

[236] ChileAlerta América Latina Unida (@Chile_Alerta), Twitter. https://twitter.com/Chile_Alerta/status/1377091751228366852.

Also, his colleague Felipe Enero resorted to fierce criticism against the U.S. in his defense of the Chinese government: "...in the face of volatility, polarization, disregard for science and the United Nations system by the U.S.leader, China offers certainty, stability, economic openness, commitment to science and multipolarism." Anti-Western criticism is a regular resort of Beijing's allies.

Another broadside against the West. "It is evident that China not only handled the outbreak very effectively, but paradoxically the pandemic revealed the shortcomings of Western democracies that handled the virus (especially the U.S.) in a very bad way," wrote political scientist Santiago Bustelo. Patricio Giusto, also an academic, seconded him in his approach: "China's so-called 'diplomacy of the chinstraps' in the West allowed the world not to collapse in terms of health. Including the U.S., one of the main destinations of Chinese exports and donations."

Other actors: Chinese embassies

Among those disseminating official Chinese narratives on Twitter, the accounts of the Chinese embassies in Argentina (@ChinaEmbArg), Chile (@ChinaEmbassy) and Peru (@ChinaEmbPeru) are the most active in disseminating political messages that can be perceived as propaganda or disinformation. It is striking, from the outset, the dates on which the accounts were created: December 2019 (Chile), February 2020 (Peru) and March 2020 (Argentina). In other words, these accounts were created at the height of the Chinese government's efforts to win the propaganda debate about who was responsible for the pandemic and why.

In little more than a year and a half of activity, the three Chinese Twitter accounts registered 1,713 tweets, but perhaps more relevant is that, little by little, the three are gaining weight in terms of number of followers (18,303 in August 2021) as they publish about news concerning or related to China. The context in the three countries under study, where there is a shortage of actors and sources dedicated to China, gives the Chinese authorities the possibility of reaching local audiences with their own messages and with little interference.

Through their Twitter accounts, the three Chinese embassies manage to monopolize, at least partially, China-related discourse in the three countries. As demonstrated in Figure 15, these accounts publish about the topics that are most important for Beijing, with a preponderance of posts related to the supposed Chinese vaccine successes (featured below as "Vacunas"), Beijing's declared eradication of poverty (featured below as "Pobreza"), the importance of Latin American diplomatic cooperation with China (featured below as "Cooperación"), and the legitimization of the CCP (featured below as "PCCh"), among others.

Figura 15

	Argentina	Perú	Chile	Total
Tuits	1069	339	305	1713
Seguidores	6389	10604	305	18174
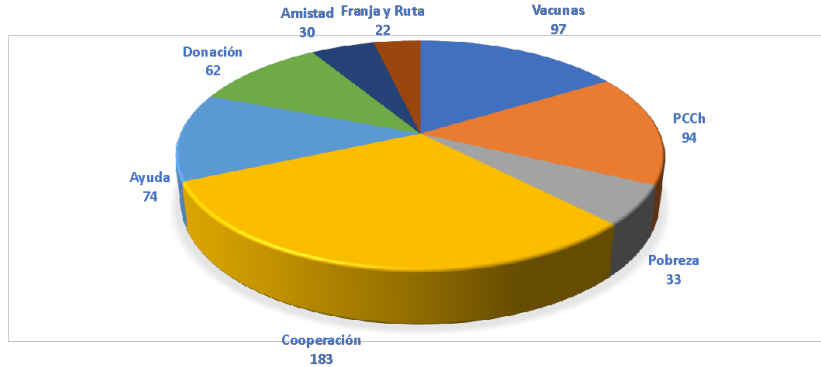
(Figure 15)

The example of @ChinaEmbPeru is useful to understand how the activity of these accounts helps to open the way for propaganda to take hold. Regarding the frequency of publication, the embassy prefers to be selective: an average of four tweets per week. The type of followers is varied, ranging from Peruvian journalists and academics to Peruvians living in China, including institutions and media from Peru, but also from other parts of the world. As of August 2021, the account had 10,685 followers, a relatively modest number compared to the 69,199 followers of the official account of the U.S. Embassy in Peru.

In the context of the pandemic, the opening of the Chinese Embassy in Peru Twitter account in February 2020 allowed Beijing to present the image of a generous and strong China, capable of managing and defeating the pandemic and, at the same time, displaying its potential to offer help and develop a vaccine. The preponderance of early Twitter posts show donations to police forces or children's libraries, as well as the arrival of the Sinopharm vaccine and Chinese scientists in Peru working together with Peruvian government personalities in a grand official media display.

On March 1, 2020, for instance, days after the creation of the account, the Chinese Embassy in Peru published the first tweets to disseminate an official documentary about the Wuhan heroes and "the stories you should know."[237] In the beginning, the account had a rather meager impact, if we consider the few retweets and "likes," but over the months that followed, it was used and quoted in a recurring manner by the Peruvian public media, including *Agencia Andina* and *Diario El Peruano*.

As an example of this evolution, on March 5, 2021, Chinese Embassy in Peru's account published a statement from Sinopharm about a television controversy that warned about

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[237] The documentary Big Story: Epicenter - 24 hours in Wuhan was broadcast in English and as of February 2021 had 912,354 views and 451 comments. https://www.youtube.com/watch?v=MnhTFjxRVUM.

the low efficacy of vaccines. This caused a political earthquake, because vaccination in that country was entrusted mainly to the Chinese vaccine. The statement received 10,124 "likes" and 4,695 retweets, the most shared post to date.[238]

These doubts regarding Chinese vaccines were consistent with the mistrust that had already surfaced during their development phase and long before China began exporting them to Peru and other countries. As explained in the section of this study devoted to vaccines, the Beijing state media, from the beginning, spread the idea that their vaccines were effective and safe, but as evidence they only presented the results of phase I and II studies published in *The Lancet*, which are preliminary and clearly insufficient to reach conclusions. Western vaccines did submit their trials to peer-review by publishing them in specialized international journals.

Regarding the March 5, 2021 controversy, the Chinese Embassy in Peru issued a vitriolic note in defense of Sinopharm, noting any doubts as to the vaccine's efficacy were the result of journalistic reports to be considered "unverified, unscientific, inaccurate and incomplete." To date, Sinopharm has not yet presented evidence to support these accusations, while *The Lancet* warned in an editorial that China's "lack of transparency around vaccines is a problem." On the subject, @ChinaEmbPeru published shortly after another forceful tweet attacking again, without presenting evidence, "[A] few 'experts' and media [who] do not tire of attacking and defaming the Chinese vaccine..."[239]

However, far from dying down, the controversy saw another turn in July 2021, following statements made by a Peruvian politician questioning the efficacy of Sinopharm. The embassy responded through its Twitter account, as it had done months earlier, with a new official statement of condemnation,[240] followed by a much more incisive tweet in substance and form: "Mr. Ernesto Bustamante, it is a crime to deprive the right to health and life of the people with misinformation and lies... It is defamation to accuse a company of corruption without any basis."[241] The second part of the tweet read: "This man chooses to ignore the truths, blinded by his ideological prejudices and his inexplicable hatred." The aforementioned three tweets received a total of 20,367 "likes" and were retweeted 6,670 times.

The altercation regarding the alleged ineffectiveness of the Chinese vaccine occurred in the context of another scandal, the so-called *Vaccine-gate*, whereby some 400 Peruvian government officials and personalities were secretly vaccinated before the end of Sinopharm's clinical trials in Peru. On February 14, the Chinese Embassy in Peru published a tweet, which registered 6,014 "likes" and 867 retweets, in which it evaded

[238] https://twitter.com/ChinaEmbPeru/status/1368254743450124291.

[239] Embajada de China en el Perú (@ChinaEmbPeru), "Sin embargo, unos pocos "expertos" y medios de comunicación no se cansan de atacar y difamar a la vacuna china," *Twitter,* May 7, 2021. Available at: https://twitter.com/ChinaEmbPeru/status/1390743535293509633.

[240] Embajada de China en el Perú (@ChinaEmbPeru), "Comunicado de la Embajada de China," *Twitter,* July 13, 2021. Available at: https://twitter.com/ChinaEmbPeru/status/1415090114036961281.

[241] Embajada de China en el Perú (@ChinaEmbPeru), "Sr. Ernesto Bustamante, es Delito privar el derecho a la salud y vida de la gente con desinformación y mentiras," *Twitter,* July 14, 2021. Available at: https://twitter.com/ChinaEmbPeru/status/1415371032249176065.

any responsibility despite the fact that it was the state-owned company Sinopharm that brought to Peru the vaccines used to secretly vaccinate: "Nothing will change and affect the firm will of the Chinese to strengthen Sino-Peruvian relations. Let us combine our efforts." Along with this slogan, it added an arm of strength and the continuously used emoticons of the Chinese flag next to the Peruvian flag.[242]

The embassy also published other official communiqués with a great impact measured in thousands of 'likes' and retweets, in which it dissociates Sinopharm from any responsibility for the *Vaccine-gate*. In one of them, the statement warns that "China rejects the terms used in some media and the defamations of the vaccine cooperation between the two parties." This communiqué was reproduced in full and without questioning of any kind by the official Peruvian news agency, Andina, as shown below:

In March, the embassy published the aforementioned communiqué from Sinopharm, accusing the Peruvian media of misinformation regarding the efficacy of the vaccine and its trials, and in April, it expressed its rejection of the media coverage in Peru. This official Chinese narrative reached an audience of thousands of people, with some examples illustrated in Table 16.

Twitter has become a priority channel for China to make official statements, rebut controversies, set the tone for the media or even attack those perceived as enemies. China uses this social media platform to not only share Beijing's views, but also the Chinese regime's vision of the role that the media should play in society.

Table 16: Publications of the Chinese Embassy in Peru disseminated in local Peruvian media and on the official Twitter account[243]

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[242] Embajada de China en el Perú (@ChinaEmbPeru), *Twitter,* February 15, 2021. Available at: https://twitter.com/ChinaEmbPeru/status/1361366646863126532.

[243] Source: Own elaboration based on the monitoring of @ChinaEmbPeru and various Peruvian media. Publications referring to official governmental visits and meetings are not included.

Author	Date	Activity/Publication	Medium	Comments	Link to Twitter/others
Liang Yu	5-04-2021	Op-ed: "Improving Hong Kong's Electoral System" (only paper, see PDF in the link on Twitter)	Diario El Peruano (official)	Recurring theme of Chinese progaganda. Appears previously under a very similar title in offical Chinese media: "Mejorar el sistema electoral de Hong Kong es una salvaguarda de la democracia"	https://twitter.com/ChinaEmbPeru/status/1379466819782709263
Interview with Li Yun	10-02-2021	Published interview: China está dispuesta a profundizar su inversión en el Perú pospandemia	Agencia Andina	Chargée d'Affaires of the Chinese embassy in Peru, highlights technological cooperation and the forthcoming release of the vaccine.	https://twitter.com/ChinaEmbPeru/status/1359553663245684741
Interview with Luis Quesada, Peruvian Ambassador to China	15-01-2021	Published interview: "Hablan los embajadores: un acercamiento al embajador de Perú en China"	CGTN español	Major theme: celebration of the 50th anniversary of Sino-Peruvian friendship, common history, China in the heart of Peruvians (migration), Chinese development and role in the pandemic	https://twitter.com/ChinaEmbPeru/status/1350089529819090944
Liang Yu	15-12-2020	Op-ed: "Propuestas de China para la recuperación económica mundial"	Diario Gestión (private)	Presents Xi Jinping's proposals now globally disseminated, introduces ideas for development, eradication of poverty and praises China's handling of the pandemic	https://twitter.com/ChinaEmbPeru/status/1338919642711121921
Liang Yu	15-12-2020	Statement: "Perú se ha convertido en el destino preferido de las inversiones chinas en la región"	Agencia Andina	Statement regarding the 10th anniversary of the Free Trade Agreement between Peru and China	
Liang Yu	1-10-2020	Speech on the National Day of China	Official YouTube channel Cultrarts and Diario el Peruano	Wide-ranging display of information Diario el Peruano (official) together with the official Chinese speech (also the Peruvian Ambassador's speech) and the screening of the Chinese documentary "La prioridad siempre es el pueblo."	
Liang Yu	17-09-2020	Op-ed: "El aporte del nuevo modelo	Diario Gestión (private)		

		de desarrollo económico de China a la reactivación económica mundial"			
Entrevista a Liang Yu	04-09-2020	Live television interview: "Embajador de China en Perú, Liang Yu, habla sobre la llegada de la vacuna contra el COVID-19 y delegación de su país"	Canal N	Undescores the close cooperation between China and Peru and the Chinese milestone in bringing the vaccine to the country	
Liang Yu	31-07-2020	Op-ed: "Promover la cooperación entre China y Perú en defensa de la paz y estabilidad mundial"	Diario El Peruano (official)	Military cooperation	
Liang Yu	30-06-2020	Conference: "The Role of China in the Global Economy and Latin America Post-Pandemic"	Centro de Estudios Asiático de San Marcos (CEAS)	Coordinated by Carlos Aquino	
Liang Yu	22-06-2020	Op-ed: "Unión y cooperación para vencer al COVID-19"	Diario El Peruano	China beats COVID and the White Paper of Chinese cooperation	https://twitter.com/ChinaEmbPeru/status/1273669519194669057
Liang Yu	17-04-2020	Op-ed: "Una reflexión sobre el futuro de la humanidad"	El comercio (private)	China and its fight against COVID, China – scientific and health power	https://twitter.com/ChinaEmbPeru/status/1251260382322331648
Liang Yu	11-03-2020	Radio interview: "Fast economic recovery expected post-crisis" and "We are coordinating with media	Radio Nacional FM	China and the fight against COVID, the economy, and health cooperation	https://twitter.com/ChinaEmbPeru/status/1237749988349837313

		specialists to help healthcare in Peru."			
Liang Yu	03-03-2020	Television interview: <u>Enrique Castillo entrevista al embajador de China</u>	Televisión CanalN	How China Beat the Virus and Cooperation with Peru	https://twitter.com/ChinaEmbPeru/status/1234846367639576577

# Chinese Narratives in The Argentine, Chilean, and Peruvian Media

The previous sections have provided an overview of how China tries to disseminate its propaganda in Latin America, through which media or actors and with which narratives. These sections outline official Chinese media efforts to project official narratives in the region through their Spanish editions. Also made clear through these sections was the role played by China's so-called "allies" in small, yet influential circles, to push forward China's official narratives.

Having identified the actors, strategy and narratives of the propaganda being promoted in the region, this section seeks to conclude whether or not such messages reach audiences in Argentina, Chile and Peru and, therefore, whether or not the aforementioned official propaganda ends up influencing local public opinion in these countries. Answering this question empirically is an extraordinary challenge due to the scale, diversity and nuances of the study. In order to get closer to the answer, we have chosen to approach the question from two different approaches. On the one hand, we examine the effect of the Chinese government's paid insertions in local media; and, on the other, we study, as a sample, whether the Twitter accounts of a selection of media from the three countries disseminate official narratives about the successes of the CCP and poverty eradication in China.

Paid insertions

First, it is important to highlight the insertion of China Media Group (CMG), a Chinese state media platform, into the media landscape of the three Latin American countries. CMG was founded in 2018 with the purpose of disseminating "the political direction" of the CCP and "guiding the public with correct values," and with the aim of influencing public opinion. In practical terms, its strategy consists of producing propagandistic content and paying for it to be published as inserts in the main written mediums of Argentina, Chile and Peru; ensuring their message is present in these media. However, unlike classic advertising, this "insert" format does not always allow making the distinction between information and propaganda.

For example, *Clarín*, the newspaper with the largest circulation in Argentina and one of the most influential in the region, published in June 2021 a four-page special on the eve of the centenary of the founding of the Chinese Communist Party.
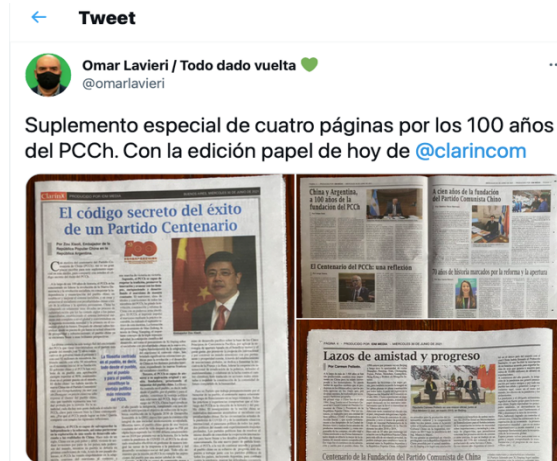
While in the print edition it is not hard to see that, due to its different layout, this consists of advertising content. In the web version, however, it is not always obvious to the reader that these inserts are "sponsored content." A disclaimer appears at the beginning of each article, but it can go unnoticed since the style and design of the piece is no different from other informative articles on the web, as can be seen below. The format is not only similar to that of any other news item, but it can even be shared through social networks or commented on as if it were any other informational piece.

Ejemplo a largo plazo
El PCCh aporta una experiencia importante de gobernanza, dice líder del PCI

Mauro Alboresi elogió el esfuerzo del PCCh de sacar de la pobreza extrema al pueblo chino.
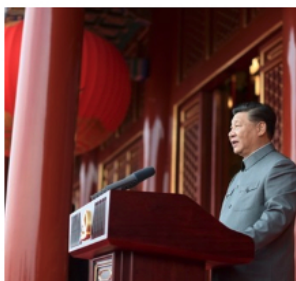
Xi Jinping, secretario general del Comité Central del Partido Comunista de China (PCCh), presidente de China y presidente de la Comisión Militar Central, pronuncia un importante discurso en una ceremonia con motivo del centenario del PCCh, en Beijing, capital de China, el 1 de julio de 2021. (Xinhua/Xie Huanchi)

06/07/2021 13:58 | Clarín.com BrandStudio |
Actualizado al 06/07/2021 13:58

Contenido Patrocinado

Con el gobierno de un país tan grande como China, el Partido Comunista de China (PCCh) está aportando una cantidad considerable de experiencia en el ámbito de la gobernanza, afirmó el secretario nacional del Partido Comunista Italiano (PCI), Mauro

Historia y logros
"El centenario del PCCh representa un hito en el desarrollo de China", afirma ex canciller de Singapur

El exministro de Relaciones Exteriores de Singapur, George Yeo, además destacó la evolución tecnológica de China.

El secretario general del Comité Central del Partido Comunista de China (PCCh), Xi Jinping, también presidente chino y presidente de la Comisión Militar Central, pronuncia un discurso en la quinta sesión plenaria de la Comisión Central de Control Disciplinario del XIX Comité Central del PCCh, en Beijing, capital de China, el 22 de enero de 2021. (Xinhua/Shen Hong)

27/05/2021 15:14 | Clarin.com BrandStudio |
Actualizado al 27/06/2021 15:14

Contenido Patrocinado

"El centenario de la fundación del Partido Comunista de China (PCCh) es un hito en el desarrollo de China", dijo el exministro de Relaciones Exteriores de Singapur George Yeo.

Al referirse al PCCh. es necesario

Sometimes the mention of the paid content is explicit, as shown in the screenshot below, but it is striking that such content was shared and recommended as an opinion article in *Clarín*'s own Twitter account without any clarification as to its origin.

Contenido patrocinado
El código secreto del éxito de un Partido Centenario

Partido Comunista de China, 100 años de historia.

Logo del 100 aniversario del Partido Comunista de China.

30/06/2021 7:01 | Clarin.com BrandStudio | Actualizado al 30/06/2021 7:01

Por Zou Xiaoli, Embajador de la República Popular China en la República Argentina:

Con motivo del centenario del Partido Comunista de China (PCCh), me es un gran placer escribir para este suplemento especial, publicado en Clarín, para compartir con ustedes el código secreto del éxito del PCCh.

A lo largo de sus 100 años de historia, el PCCh se ha concentrado en liderar la revolución de la Nueva Democracia y la revolución socialista, en conquistar la

Clarín @clarincom

El código secreto del éxito de un Partido Centenario
Translate Tweet

El código secreto del éxito de un Partido Centenario
Partido Comunista de China, 100 años de historia.
clarin.com
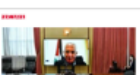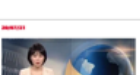
5:48 PM · Jun 30, 2021 · Echobox

This is not the only example in which information and propaganda are mixed in the Buenos Aires newspaper. At the end of August 2021, Clarín's website in the "Topics" section, which classifies news by subject, grouped a total of 97 reports under the heading "Communist Party of China."[244] Most of them -although not all- are reports prepared by GMC that disseminate the issues that are important for Beijing, often making use of official talking points.

Among others, the themes that dominate are those that extol the virtues of the CCP and Chinese model, including the success in eradicating poverty and the regime's cooperation with the developing world. The big question to be asked is whether audiences are able to differentiate information articles from propagandistic ones.

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[244] "Partido Comunista de China," *Clarín.* Available at: https://www.clarin.com/tema/partido-comunista-de-china.html.

Examples of headlines in the daily newspaper *Clarín*:

"**Peaceful cooperation**: President of the European Left appreciates the PCCh for respecting cultural differences"
"**International example**: China's path for development outlined by the PCCh is "impressive," says Canadian communist leader"
"Major successes: "China sees major achievements thanks to the **wise leadership of the PCCh**," says president of the Senate of Cambodia"
"Outstanding accomplishments: "Officials see the success of PCCh's governance as inspiration for the world"
"**Fight against poverty:** the PCCh is the "backbone" of the Chinese nation, says Former Brazilian President Cardoso."
"Historical achievements: Former Egyptian Minister says the PCCh is the principal factor behind the **'miracle of progress in China'**"
"Effective and continuous: Chinese development led by the PCCh is **an inspiration for other countries**, says Palestine Party leader."

For its part, during the period of analysis of this paper, GMC carried out the same practice in three of Chile's most important mediums. El Mercurio, the country's most influential newspaper, published inserts on a regular basis. In April 2020, in the midst of the controversy over China's responsibility in the pandemic, it published through a full-page paid insertion in the Chilean media what had been published days before in China Radio

International: "U.S. media: the White House found a large number of "scapegoats" to transfer internal criticism."[245]

It is not, as befits classic propaganda, a laudatory article about China and its authorities, but a full-fledged reproach to the U.S. to deflect the criticism that China was receiving at the time for the cover-up and opacity around COVID-19. The article criticized Donald Trump for his responsibility in the handling of the crisis, which explained - according to the story - Trump's blaming of China. On the same day, another GMC news story delved into the same line: "U.S. investigation: Surprised! A large number of COVID-19 fatalities were buried quietly."[246]

In September of the same year, the publication of another insert touched on diplomacy and multilateralism: "What kind of United Nations does the world need? The "China proposal" responds to "questions of the times," it read, just as GMC has published inserts defending Argentina's sovereignty over the Malvinas (Falklands) Islands.[247] In March 2021 El Mercurio published another series of articles by GMC, although by then the subject matter had already changed and the interest in showing the achievements in the fight against poverty prevailed: "Unveiling the code of China's miracle of poverty elimination," included in a special display to disseminate this subject, as shown below:

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[245] "Medios estadounidenses: la Casa Blanca encontró una gran cantidad de "chivos expiatorios" para transferir las críticas internas," *China Radio International,* April 11, 2021. Available at: http://espanol.cri.cn/news/world/1018/20200411/451056.html.

[246] Both articles were published in El Mercurio on April 17, 2020.

[247] In June 2021 GMC inserted a half-page paid article in Chile's El Mercurio with the headline "China supports Argentina's sovereignty claim over the Malvinas Islands."

A revealing sample of the kind of impact these insertions can have on audiences can be seen on the front page of the El Mercurio website. Here, the above-mentioned piece ("China's poverty-elimination miracle code unveiled," included in the "Society" section) enters the website's "readership ranking" as if it were any other news item. In this ranking, the news item fabricated by GMC was the fifth most read news item of the day at the time the capture was made:

At the same time, the newspaper La Tercera also reached an agreement with GMC in January 2020 with the aim of "offering relevant stories to show an updated version of the various aspects of that country's culture," as revealed by the newspaper when announcing the alliance. With a format similar to that referred to in the Clarín newspaper, the second Chilean newspaper created on its website the "China Connection" section, where the different contents prepared by GMC are included, as illustrated here:

China / Democracia, libertad y justicia
social: Chile-China y la siembra de Allende

Isabel Allende Bussi, senadora de la República de
Chile.
30 sep 2020 07:11 PM

El papel que mi padre desempeñó en la historia
marcó a muchos y sigue vigente en los valores de
democracia, equidad y desarrollo económico de
todos los pueblos del mundo, aunque los
tiempos sean distintos.

China / Chile y China: una relación
ejemplar

Eduardo Frei Ruiz-Tagle, Expresidente de Chile.
30 sep 2020 07:07 PM

Chile es uno de los países latinoamericanos que
desarrolló en forma más rápida, temprana y con
mayor determinación sus vínculos con China.
Una senda que se comenzó abrir hace 50 años y
que hoy tenemos el deber de preservar,
promover y profundizar.

China / China: cincuenta años, tres
momentos, dos países diferentes
avanzando hacia la comprensión mutua

Ricardo Lagos, Expresidente de Chile.
30 sep 2020 07:02 PM

Cooperar y competir son realidades entrelazadas
—como el yin y el yang— con las cuales cabe
entender las interdependencias de nuestro
tiempo, en una globalización que no soñamos
cincuenta años atrás.

China / 50 años de relaciones bilaterales
proyectadas al futuro

Andrés Allamand, ministro de Relaciones
Exteriores de Chile.
30 sep 2020 06:58 PM

Nuestra relación está cimentada sobre la labor
de ambos Gobiernos, robustecida por los
esfuerzos del mundo empresarial, la academia y
la sociedad civil.

China / China y Chile: cooperaciones
amistosas de medio siglo

Xu Bu, embajador de China en Chile.
30 sep 2020 06:54 PM

China se ha mantenido como el mayor socio
comercial de Chile por diez años consecutivos y
es el mayor destino de exportación de muchos
productos chilenos como cobre, cereza, carne de
cerdo, etc. En los últimos dos años, China
también se ha convertido en la mayor fuente de
inversión extranjera para Chile.

Cultura china / Los secretos y sabores de
las ocho escuelas culinarias de China

Grupo de Medios de China
15 abr 2020 07:18 PM

La cultura culinaria de China ha experimentado
un desarrollo de 5 mil años, y está compuesta
por platos de todos los rincones del país. A pesar
de existir un sinfín de restaurantes de comida
china en nuestro país, se desconoce la inmensa
variedad que existe en el país asiático.

Cultura china / La emoción de los poetas y
escritores chinos cuando visitan las casas
de Neruda

Alfonso Wan Dai   15 abr 2020 04:55 PM

Los intelectuales asiáticos quieren conocer al
poeta íntimo, desde la mirada de sus propios
hogares y objetos. Aprecian tantos los juguetes
en las habitaciones, la tinta con el color verde, el
amor escondido en la pintura de Diego Rivera,
entre otros.

Cultura china / La exigente prueba final
para ser nombrado monje Shaolin:
dominio cabal del Kung fu y espiritualidad

La Tercera   15 abr 2020 02:59 PM

Disciplina, sufrimiento, autocontrol y rechazo de
la violencia se ven enfrentados en la evaluación
definitiva que los monjes shaolin deben superar
si se quieren graduar como maestros en China.
Un documental de la BBC describe las etapas a
superar.

Cultura china / ¿Quién fue Confucio y por
qué es tan importante para China?

Alison Vivanco   15 abr 2020 01:36 PM

Conocer la cultura china va más allá de saber
cuál es su idioma, su escritura, sus peculiares
vestuarios o su sabrosa comida. Un ítem
imprescindible para descifrar a la nación asiática
dentro de tantos, es comprender la filosofía que

Occasionally, the Chilean newspaper has also published special supplements both in its paper edition and on the web. This was the case in October 2020 on the occasion of the 71st anniversary of the founding of the People's Republic of China and the 50th anniversary of the establishment of diplomatic relations between Chile and China. Relevant personalities of Chilean society, including former presidents Ricardo Lagos and Eduardo Frei, among others, have penned articles in this section.
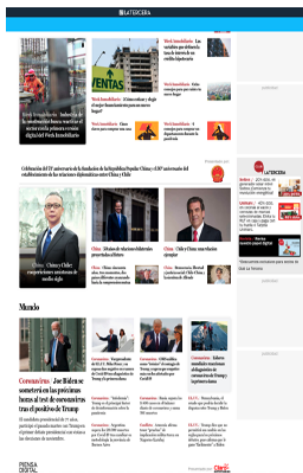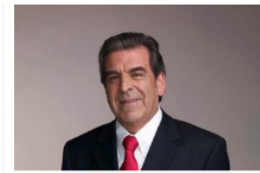
Radio Cooperativa, a radio station with national reach, also concluded a multimedia agreement in 2020 with GMC to broadcast content in different formats, ranging from from a weekly radio program to a series of podcasts on Chinese culture (including in the Chilean media platform, the "Efecto China" section on https://www.cooperativa.cl/, which entails daily updates, news reports, opinion articles and videos. The web section features GMC's corporate logo.[248]

Xinhua, CGTN, and China Radio International produce most of the content that is broadcasted and aired on the Radio Cooperativa website. However, these are mixed with information of their own or from other media, which contributes to Chinese propaganda being perceived as information and not as propaganda. An example of this is the article "What does the "Chinese sample" bring to the governance of poverty reduction in the world," whose author is the Chilean media itself, despite the fact that there is also a reference to GMC further down in the body of the news item.[249] China prepared the audiovisual product in advance.[250]

Another example of Chinese engagement with Chilean radio was the broadcast of "Efecto China,", which broadcast half a dozen five-minute documentaries on the eradication of poverty in China. The autovisual came canned from China and broadcast in Chinese with Spanish subtitles. To justify the partnership of this nature with the Chinese media, the Chilean radio assured that "the evaluation of the first season is very good because it exceeded our expectations in terms of audience and content. We received many positive

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[248] "Efecto China," *Cooperativa.* Available at:

https://www.cooperativa.cl/efectochina/.

[249] "¿Qué trae la "muestra china" a la gobernanza de la reducción de la pobreza en el mundo?," *Cooperativa,* March 2, 2021. Available at: https://www.cooperativa.cl/noticias/corporativo/efecto-china/efecto-china-opinion/que-trae-la-muestra-china-a-la-gobernanza-de-la-reduccion-de-la/2021-03-02/183027.html?=efectochina.

[250] For examples of documentaries produced by CGTN and Radio China International, see "La erradicación de la pobreza: Una promesa solemne," *Cooperativa,* March 7, 2021. Available at: https://www.cooperativa.cl/noticias/corporativo/efecto-china/efecto-china-noticias/la-erradicacion-de-la-pobreza-una-promesa-solemne/2021-03-07/182057.html?=efectochina.

comments from different people, and they asked us to come back with another season. Today "Efecto China" went from being a radio program to a multimedia project, thanks to the important collaboration agreement we managed to close with the China Media Group... Our expectation is that the project will become a reference for all the public who want to learn and deepen their knowledge about China," remarked the director of the Chilean radio program.[251]

CHINESE NARRATIVES IN THE TWITTER ACCOUNTS OF ARGENTINE, CHILEAN, AND PERUVIAN MEDIA.

Having seen the direct impact of paid insertions in some of the most influential media in the region, an alternative way to detect whether the Argentine, Chilean and Peruvian media pick up the official Chinese narratives is to analyze content referring to China in the Twitter accounts of a selection of representative media.[252] To do so, through the FanpageKarma tool, all 875,835 tweets published between January 2020 and July 2021 by 14 media from the three countries were downloaded.[253]

A keyword filter was then applied to detect whether the tweets echoed two of the recurring narratives of the Chinese regime: one option being all tweets from China that addressed the theme of "poverty"; and, on the other option consisting of those that included the terms "PCCh," "PC chino," "PC de China," "Partido Comunista," "centenario," or "Xi Jinping." After manually removing the tweets that include those words but do not refer specifically to China, the result of this simple method is that the dissemination of Chinese narratives in the Twitter feed of the selected media is, in general, anecdotal.

Only 165 tweets include such narratives, of which 40 are critical or do not support such narratives because they merely reflect news events in an aseptic way. For example, *La Nación* questions both "the doubts raised by the announcement on the end of extreme poverty" and the future of the CCP in the centenary of its foundation. Clarín does not disseminate Chinese narratives in a positive light either, except for the tweet referred to above with a link to the insert of the China Media Group. Even La Tercera, which due to its proximity to GMC spread 32 openly propagandistic tweets, did not hesitate to publish another 11 critical tweets from the Wall Street Journal, Reuters or Human Rights Watch.

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[251] ""Efecto China" comenzó su segunda temporada como proyecto multimedial," *Biblioteca del Congreso Nacional de Chile,* November 8, 2020. Available at: https://www.bcn.cl/observatorio/asiapacifico/noticias/programa-efecto-china-cooperativa-2020.

[252] We have chosen to analyze the Twitter accounts of a selection of media outlets because of the ease of downloading tweets with the FanpageKarma tool. Obviously, such analysis does not necessarily coincide with the much more complex analysis of web content, but it does allow us to intuit the reach of official Chinese narratives among the social media audiences of the Argentine, Chilean and Peruvian media selected for the sample.

[253] The 14 media and the number of tweets downloaded from each one are: in Argentina, Clarín (82,735), La Nación (67,765), Perfil (38,513), Página 12 (47,186) and Agencia Télam (47,560); in Chile, El Mercurio (2. 220), La Tercera (112,417), La Cuarta (41,267) and Radio Cooperativa (178,112); and in Peru, El Comercio (71,104), La República (59,617), Perú 21 (52,394), Diario el Peruano (28,302) and Agencia Andina (46,643).

The other media, excluding La Tercera, chose to spread official propaganda were Chile's Radio Cooperativa (24 tweets), whose link with GMC has already been described; Argentina's Página 12 (10 tweets) and Agencia Télam (23 tweets); and Peru's Agencia Andina (6 tweets) and Diario El Peruano (9 tweets). The newspaper Página 12, perceived as ideologically sympathetic to everything China represents, shared tweets referring to texts published in the newspaper and signed by the directors of Dang Dai[254] and CLEPEC,[255] two of the 23 "allies" of China in Argentina in this study that favor such narratives in their Twitter accounts. One of them starts as follows: "Although many Western hegemonic media ignored the announcement, at the end of 2020, a catastrophic global year, China announced nothing less than that, after patient, organized and ultra-detailed work by household, family and even individuals (in a country of more than 1,400 million inhabitants) it had eradicated destitution."

As for the national news agency Télam, its deployment on Twitter was consistent with the special section elaborated for its news service on the occasion of the centenary of the CCP, "one of the largest and most powerful political formations in the world, responsible for the radical transformation of the Asian giant."[256] The total of 23 tweets refer to poverty, the history of the CCP, the transformation of China, the Belt and Road, Sino-Argentine relations or the cooperation of the CCP with the Justicialist Party, its great political ally in Argentina. The notes are self-produced, but reference is made to sources of the Chinese regime and no criticism of its authoritarian nature can be discerned.

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[254] Página12 (@pagina12), "La erradicación de la indigencia en China," *Twitter,* May 16, 2021. https://twitter.com/pagina12/status/1394098072314126338.

[255] Página12 (@pagina12), "El Partido Comunista de China, un partido centenario," *Twitter,* May 11, 2021. Available at: https://twitter.com/pagina12/status/1392306261866258432.

[256] The tweet announcing the "special" on the CCP centennial is accessible at: Agencia Télam (@agenciatelam), "Especial Télam I A 100 años del nacimiento del Partido Comunista chino," *Twitter,* July 1, 2021. Available at:

https://twitter.com/AgenciaTelam/status/1410611651565391874.

The role of Agencia Télam in the dissemination of Chinese propaganda is not very different from the role played in Peru by the Peruvian official media: Diario el Peruano, Agencia de noticias Andina and TV Perú.[257] From the exhaustive analysis of the contents that the state media publish in relation to China, it can be deduced that their cooperation with the Chinese authorities and media is very present.

Information about China and its local embassy occupies a preferential place in the Peruvian public media, both in the written media -Agencia Andina and Diario El Peruano[258]- and on TV Perú, although the latter to a lesser extent. Also, novel and noteworthy in the period analyzed here is the regularly disseminated tweets from the Chinese embassy in Peru being used as a source of information in these print media.

Monitoring the Peruvian media, it can be observed how these official press sources report on China in a preferential manner. This is the case, for example, in September 2020, of the arrival of the vaccine to conduct a phase 3 clinical trial in Peru, as reported by Agencia Andina in great detail. Or the National Day of China, on the 71st anniversary of the founding of the People's Republic, whose coverage in El Peruano newspaper made the

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[257] For more information on this, see the chapter "Reframing relations in Peru" in the Sharp Power Rising authoritarian Influence Report (2017). It describes China's close ties with Peruvian public media. Juan Pablo Cardenal, "Reframing Relations in Peru," in *Sharp Power: Rising Authoritarian Influence,* (National Endowment for Democracy, 2017). Available at: https://www.ned.org/wp-content/uploads/2017/12/Chapter3-Sharp-Power-Rising-Authoritarian-Influence-Peru.pdf.

[258] According to a 2019 report by Editora Perú, the company responsible for Agencia Andina and Diario El Peruano media, digital information occupies the main efforts of the company since 2019, so only the audience data in networks and web are presented. In 2019, Agencia Andina obtained 42.5 million visits on its website while El Peruano received 10 million. As for Twitter, in May 2021 Agencia Andina has 658,403 followers and El Peruano has 343,789 followers.

front page. This coverage contained a Youtube link to the Chinese ambassador's speech. The speech highlights China's capacity to eradicate poverty and become a world economic power, as well as its capacity to "control" the pandemic. These narratives are continuously repeated and disseminated by the aforementioned Peruvian media and by other "allies" of China in Peru.

This example can be seen below:

This closeness or favored treatment with the Chinese regime is evidenced by downloading the tweets of the three Peruvian public media from January 1, 2020 to July 15, 2021. With the filter of the keywords "China," "Sinopharm," "vacuna," and "Vacunagate," 3,919 mentions of the word "vacuna" are registered, 541 references to "China," 210 to "Sinopharm" and only two to "Vacunagate," are mentioned on TV Perú, but only because this word was mentioned in a public statement.

The conclusion of this simple terminological analysis is that, while the Twitter accounts of the three Peruvian media have prioritized the topics of China, vaccines and Sinopharm, they chose to omit the Vacunagate scandal, despite its political and media relevance in the country. In other words, the public media of Peru, whose ties and agreements of several years with their Chinese counterparts are well known, chose to silence a scandal that, beyond the fact that it could also tarnish the government in Lima, left both Sinopharm and the Chinese embassy in Lima with a diminished reputation in the eyes of the Peruvian public opinion.

On the other hand, from the download of the tweets containing the word "China" and exceeding 100 'likes,' which determine which publications are most popular with the Peruvian public on social networks, the topic related to Chinese cooperation in Peru

through health aid during the pandemic and the arrival of the Sinopharm vaccine stands out especially.

fecha	cuenta	tuit	me gusta	retuit
01 Apr 2020	@Agencia_Andina	China donará 30,000 kits de pruebas moleculares al Perú. https://t.co/9zu1kzRpUD https://t.co/Od8tCcaqEP	1611	467
24 May 2020	@DiarioElPeruano	??Grupo de expertos médicos de la República Popular China llegó hoy al Perú con la finalidad de contribuir en la lucha contra el	678	158
15 Jan 2021	@Agencia_Andina	La canciller Elizabeth Astete anunció que el millón de vacunas comprometidas con el laboratorio chino Sinopharm ya están	546	200
08 Feb 2021	@Agencia_Andina	??Primer lote de vacunas contra covid-19 ya se encuentra en territorio nacional. https://t.co/713lKeTtj6	413	78
20 May 2020	@DiarioElPeruano	Perú agradece a la empresa Tres Gargantas (China Three Gorges Corporation), compañía eléctrica estatal china, por la donación d	324	62
24 May 2020	@Agencia_Andina	[Fotogalería??] Cuatro médicos provenientes de China llegan a Perú para enfrentar la pandemia del covid-19.	290	64
19 Mar 2020	@DiarioElPeruano	Los gobiernos de China y Cuba pusieron a disposición del Perú un grupo de médicos para apoyar al @Minsa_Peru en la emergenc	284	76
24 May 2020	@Agencia_Andina	??Grupo de expertos médicos de la República Popular China llegó hoy al Perú, con la finalidad de contribuir en la lucha contra	225	54
14 Feb 2021	@Agencia_Andina	La embajada de China en Lima aseguró que nada cambiará ni afectará la firme voluntad de parte de su país para fortalecer las	202	30

A tweet from *Agencia Andina* on February 14, 2021, which received 202 'likes,' serves as an example that exposes how the Peruvian media spread a piece of information published on Twitter by the Chinese embassy in Peru as news. *Agencia Andina* includes the link to the full news item from the embassy: "Nothing will change the firm will to strengthen the relationship" with Peru, next to the recurring image of the two flags. The headline and the piece open by referring to the tweet from the Chinese embassy that highlighted the arrival of a second batch of Sinopharm vaccines to Peru. This was received by the foreign minister who, hours later, resigned from her post after becoming implicated in the Vacunagate case.

This modus operandi of the Peruvian public media *Agencia Andina*, i.e., to inform the public using information disseminated by the Chinese embassy through its account in the social network, extends to another official medium, the *Diario El Peruano*. In this medium, the same modus operandi can be observed by looking at the closing of Peruvian negotiations to buy China's vaccine. In January 2021, *Agencia Andina* also published an article that included statements by the Peruvian ambassador in Beijing about the Chinese vaccine: "Peru's ambassador to China, Luis Quesada Incháustegui, stressed that Sinopharm's vaccine has received praise from the Western medical press, such as the prestigious journal *The Lancet*."

In two other news items, dated February 7, "China will continue to support Peru in its fight against the pandemic" (*Agencia Andina*) and "China will continue to support Peru in its fight against COVID-19" (*Diario El Peruano*), the same phenomenon is observed, in which the information published in the official account of the embassy in the network is prioritized to then highlight the Sino-Peruvian friendship and the 50th anniversary of relations between the two countries.

¡Viva la amistad China-Perú!, publicaron en otro tuit la embajada de China en nuestro país.

NARRATIVES AND PROPAGANDA IN RUSSIAN MEDIA

Sputnik v: Russia's great geopolitical coup

Introduction, classification, and headline analysis

Russia approaches the narrative around COVID19, in particular the narrative related to the vaccine, from three domains: public diplomacy, propaganda and disinformation. To shape information or, as the case may be, disinform, the Russian state has as its main instruments in the conventional media, the *Sputnik* news agency and *RT*[259] national television in their Spanish editions. Both disseminate their content through the web and social networks, in addition to television broadcasts in the case of RT.

From a dataset of 1,772 news items whose headlines mention vaccines from Russia, China, and Western, these articles, when disaggregated by their national origin, consist of the following: 1,081 articles on the Russian vaccine Sputnik V; 512 articles on Western vaccines Pfizer, Moderna, AstraZeneca and Johnson & Johnson; and 177 articles on Sinovac, Sinopharm and other Chinese vaccines.

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[259] The newspaper *Russia Beyond*, whose paper supplements were inserted for years in some of the most important newspapers in the world, has become for years an online medium focused more on cultural issues than on political ones. Due to its loss of relevance, its analysis has been omitted from this study.

Cobertura de las vacunas en RT/Sputnik por origen

Vacuna rusa	1081
Vacunas chinas	177
Vacunas occidentales	512
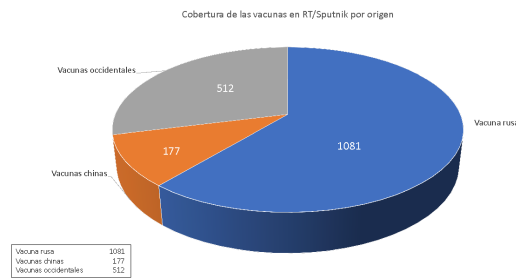
From the study of headlines above, which was corroborated perfectly both in the subsequent Python word analysis and in the in-depth analysis of the contents, the characteristics of the narratives disseminated by the Russian media are clear.

First, the Sputnik V vaccine is presented as a scientific milestone. This success is disseminated in terms of international prestige and as proof of both the competence of the Russian government and the geopolitical importance of Russia in the world. An effort is detected to put Russia, thanks to the vaccine, on the same level as the U.S. or China, despite its lesser real economic and political weight.

Therefore, the Russian geopolitical narrative surrounding the Sputnik V vaccine responds to Russia;s desire to expand its influence in the world. This includesLatin America, where its economic presence is relatively modest, but where its virtual presence through its state-owned media is significant. This narrative promotes a strong Russia in a multipolar world.

Similar to Chinese official media, the Russian media also question the efficacy, safety and reliability of Western vaccines with which Sputnik V rivals. This is sometimes done with sensationalist or misleading criticisms, by minimizing or omitting contextual information considered crucial to understanding the facts. The practices of Western pharmaceutical companies are also criticized. Although they do not operate jointly or in coordination, the concurrence of interests at the geopolitical level on the part of Russia and China leads to a coinciding narrative that is reflected in the media of both countries.

The very name 'Sputnik V' given to the Russian vaccine is not only a term of great symbolism, but also, in a way, a statement of Moscow's intentions in geopolitical terms. The vaccine owes its name to the satellite that the USSR put into orbit for the first time in 1957, which at the time was considered a Soviet scientific feat and a discredit to the U.S.. In today's context, it represents the reinstatement of Russian research into the world's scientific elite, after its dismantling following the fall of the USSR. The implicit message is that "Russia is back."

Going into the analysis of the headlines, the first conclusion to be drawn from the reading of the 1,081 headlines of the inventory of news related to the Russian vaccine is that, in practically all of them, references to Sputnik V are positive. Only occasionally - 10 headlines - is mention of the vaccine in negative terms, but almost always to deny, or object to criticism of Sputnik V.

The second conclusion is that most of the news items about the Russian vaccine published by *RT* and *Sputnik* intend to give praise. This is demonstrated not only by the fact that 43 articles expressly refer in their headline to the vaccine's efficacy or safety, but above all by the fact that 512 other headlines specifically refer to its acceptance by the international community. These headlines mention the authorization, receipt, approval, use, supply, registration, presentation, purchase, announcement, production, negotiation, acquisition, testing or vaccination of Sputnik V in other countries, as shown in the following table:

Medium	Date	Title
Sputnik	21.1.21	**Authorization** of the Sputnik V vaccine in Mexico is "much more advanced"
RT	22.2.21	Paraguay **receives** the first shipment of the Russian Sputnik V vaccine against COVID-19
RT	5.2.21	Brazil **approves** the no-bid purchase of the Russian Sputnik V vaccine
Sputnik	6.4.21	Bolsonaro and Putin discuss expediting the **use** of the Sputnik V vaccine in Brazil
Sputnik	21.3.21	Maduro thanks Putin for **deliveries** of the Sputnik V vaccine
Sputnik	7.11.20	Sputnik V will be the first anti-COVID vaccine to file for **authorization** in Israel
Sputnik	2.12.20	On December 2nd, Russia **will present** its anti-COVID vaccine Sputnik V to the United Nations
Sputnik	4.2.21	Brazil plans to **buy** 10 million doses of the Russian Sputnik V vaccine
RT	9.3.21	Chilean Ministry of Health **announces** deal to acquire the Sputnik V vaccine
Sputnik	22.1.21	Russia signs deal with Turkey to **produce** millions of Sputnik V doses
Sputnik	14.3.21	Peru **negotiates** with Russia the purchase of 20 million doses of the Sputnik V vaccine
Sputnik	12.1.21	Mexico considers **acquiring** up to 24 million doses of the Russian Sputnik V vaccine
Sputnik	10.11.21	Maduro announces that **trials** of the Sputnik V vaccine are progressing very well in Venezuela
Sputnik	27.12.20	Argentina starts anti-COVID **vaccinations** with the Russian treatment on the 29th of December

The fact that, by March 2021, at the end of the period under study, the use of Sputnik V had already been authorized in at least 58 countries, allows the Russian media to give a propagandistic slant to their coverage of the vaccine that can be detected in the headlines. Many of the news items published focus precisely on highlighting the international approval of the vaccine, which is presented as a scientific and geopolitical success for Moscow. It is also presented as an element of legitimization of Moscow, since it is developed by a Russian state institution.

Among the countries most mentioned in the headlines, Argentina stands above the rest, with 151 appearances in the headlines. Two factors explain this. On the one hand, it is one of the Latin American countries that entrusted Sputnik V with a large part of its vaccination program. On the other hand, because of its profile and because it is a consequential country in the region, it is perceived as important in Moscow's geopolitical objectives.

Legitimidad internacional	512
Argentina	151
En clave positiva (eficacia y seguridad)	43
En clave negativa	10
Otros	320
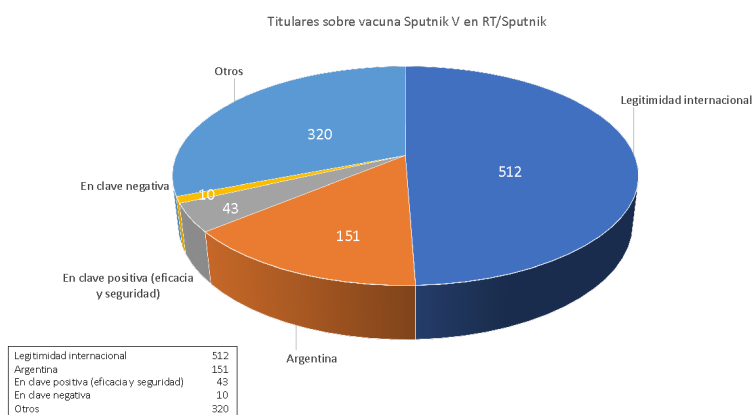
With respect to Western vaccines, of the 512 articles referring to Pfizer, AstraZeneca, Moderna and Johnson & Johnson, 342 articles are considered "neutral," i.e., in general, they are limited to reporting news related to these vaccines in an aseptic manner. Among these, the articles which stand out are those reporting on approvals for the vaccines' use in different countries, purchase commitments, the shipment and receipt of batches, supply agreements, and the start and evolution of vaccination in various countries.

However, among the other 170 articles in this category, 124 headlines refer to Western vaccines in a negative light, referring, on the one hand, to doubts about their safety, adverse reactions, side effects or deaths; and, on the other hand, to delays in distribution or logistical difficulties. In addition, another 20 headlines delve into the criticism from a different perspective: that of the commercial and contractual agreements of Western pharmaceutical companies with different countries in Europe and Latin America.

These twenty news items, as well as seven others whose headlines censure the actions of the West and its rivalry with the Russian vaccine Sputnik V, allow the Russian media to develop another of Moscow's geopolitical narratives: the reproach of the West through the alleged evil practices of large Western corporations. This consists of an indirect way of rivaling Western democracies by identifying their alleged weaknesses.

Neutros/informativos	342
En clave negativa (eficiencia y seguridad)	124
Crítica por malas prácticas empresariales	20
Otros	26
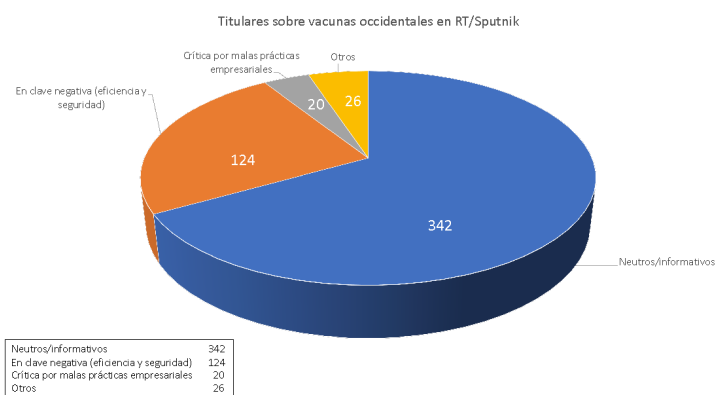
As for Chinese vaccines, of the 177 headlines referring to Sinovac, Sinopharm or Coronavac, 128 of them present them in a positive light, either by highlighting their efficacy, linking them to the cooperation offered by Beijing or, in particular, by highlighting any fact that entails international recognition. Any event that contributes to their legitimacy is thus reported: agreements with third countries to develop clinical trials, the approval of the use of their vaccines and the purchase or arrival of these vaccines in other countries, among other news.

It is striking that, despite the controversy over both the alleged low efficacy of Sinovac and Sinopharm vaccines and the non-publication of the breakdown of their clinical trials, the Russian media avoid any criticism of these vaccines. Only 19 headlines - out of 177 - have negative connotations, although most of them are related to the *Vaccinegate* scandal in Peru or to Brazilian President Jair Bolsonaro's criticism of Asian vaccines. Only three headlines expressly refer to the limited efficacy, safety and side effects of these vaccines, or to the distrust they arouse in certain areas. On the other hand, 24 headlines echo the cooperation between Russia and China on vaccines.

Titulares sobre las vacunas chinas en RT/Sputnik

en positivo	128
en negativo	19
cooperación con Rusia	24
otros	6
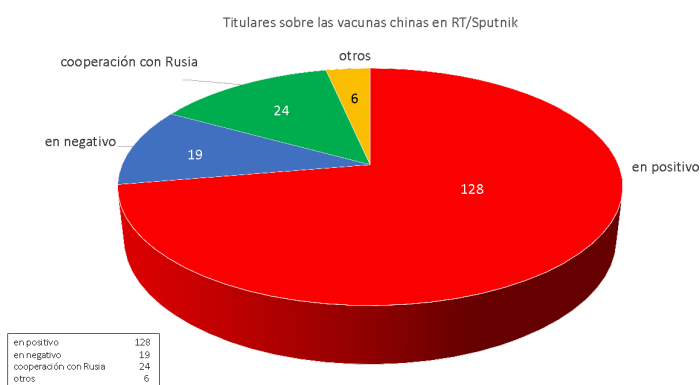
Qualitative analysis of the content

The Python analysis shows, in the 1,081 articles analyzed, that the word "Sputnik V" is mentioned 7,138 times and "Russian vaccine" 2,035 times. Citations referring to foreign vaccines (Pfizer, AstraZeneca, Moderna, Johnson & Johnson, Sinovac and Sinopharm) total 753 mentions, i.e. for every time one of the foreign vaccines was cited, Sputnik V was mentioned 12.5 times. This confirms that the content of the article inventory mainly touches on the Russian vaccine.

The Python tool confirms the same trend. It identifies a group of 16 keywords that would be associated with the success, efficacy and safety of the vaccine and counts their frequency of use. The result is that terms such as "eficacia," "seguridad," "protección," "efectividad," "inmunidad" and 11 others to complete the list of 16, are cited 2,402 times in 1,188 articles[260] (see table below). In 701 of these articles, these words appear in the

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[260] Python counts both the number of mentions of each of the 16 keywords and the number of articles in which they are cited. This counting is done individually for each of the keywords, so that each time two or

headline and/or in the first sentences of the article.[261] The location of these words in the initial part of the articles and the greater visibility of the texts allows us to deduce that the narratives constructed with them dominate the informative coverage of the facts.

Positive mentions in RT and Sputnik's coverage of Sputnik

Menciones en positivo vacuna Sputnik V				
(Eliminadas Stop Words y lematizadas)				
category	word	Sum of word_count	Sum of #_art	Sum of in_header
['Vacuna positiv	eficacia	571	277	109
	seguridad	370	225	74
	protección	321	63	31
	éxito	207	179	173
	seguro	182	91	55
	efectividad	153	66	53
	eficaz	142	75	58
	interés	134	57	46
	inmunidad	85	33	23
	esperanza	76	46	25
	respuestainmune	57	20	7
	efectivo	55	32	17
	confíar	35	12	23
	fiable	11	9	6
	segurayefectivo	2	2	1
	efectivaysegura	1	1	0
Grand Total		2402	1188	701
Sum of word_count	Nº de menciones de cada palabra			
Sum of #_art	Nº de artículos en los que cada palabra es citada			
Sum of in_header	Nº de veces que cada palabra es mencionada en el titular o frases subsiguientes			

Although the above data alone demonstrate that Sputnik V is presented positively in the media, to further reinforce this hypothesis, we identified all the times in which the above 16 keywords are mentioned, in the same sentence, together with the words "Sputnik V" or "Russian vaccine." Of each and every one of the positive mentions, at least half are directly linked to the Russian vaccine by sharing location in the same sentence, as shown in the following table. Of the other half, despite not being in the same sentence, it is reasonable to assume that most of them also refer, predictably, to the Russian vaccine.

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more keywords are mentioned in the same article, Python counts one article for each keyword that appears. In the case at hand, this explains why the 16 keywords are mentioned in more articles (1,188) than the number of articles analyzed (1,172). What this circumstance tells us is that two or more keywords are cited in many articles.

[261] The Python tool was programmed to identify keywords in the headline and in the next seven sentences of the articles, whether these were the subtitle, lead sentences or the first and/or second paragraph of the news item. The criterion was to identify the location of these words in a prominent place in the news item.

Mentions of positive terminology linked to the Russian vaccine

	Apariciones de palabras clave vinculadas en la misma frase a 'sputnik v' y 'vacuna rusa' (Eliminadas Stop Words y lematizadas)			
expresion	expresion buscada	Sum of word_count	Sum of #_art	Sum of in_header
1	eficacia	308	136	81
	éxito	186	168	166
	seguridad	150	90	54
	efectividad	107	49	45
	seguro	87	44	37
	eficaz	77	40	39
	interés	73	33	33
	protección	64	30	24
	esperanza	41	27	18
	inmunidad	39	19	18
	demanda	37	17	8
	efectivo	26	14	10
	confíar	26	9	19
	respuestainmune	20	6	6
	humanitario	6	6	3
	segurayefectivo	1	1	1
Grand Total		**1248**	**689**	**562**
Sum of word_count	Nº de menciones de cada palabra			
Sum of #_art	Nº de artículos en los que cada palabra es citada			
Sum of in_header	Nº de veces que cada palabra es mencionada en el titular o frases subsiguientes			

An in-depth analysis of the inventory of news items further explores the same idea. In order to give international prestige to the image of Sputnik V, Russian state media often resort to disseminating compliments coming from Western institutions or media, which, in other contexts, are usually denigrated.

In this manner, *Sputnik* and *RT* reported that the Sputnik V data "made a big impression on 100 U.S. doctors,"[262] or that *Bloomberg* "trusts" the Russian vaccine, considering it "as strong a candidate as those of the West."[263] The Sputnik V vaccine was also given lip service by a New York Times journalist, who called it "a genuine achievement,"[264] or by Oliver Stone, who said: "I don't understand why the West ignores it."[265]

These compliments were not the only ones. Among others, *Sputnik* an *RT* also referred to the "praise" of a Nobel Prize in Medicine,[266] to the validation of its efficacy by both *The*

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[262] ""Todo suena muy alentador": los últimos datos sobre la vacuna rusa Sputnik V "causan gran impresión" en 100 médicos de EE.UU.," *RT,* September 29, 2020. Available at: https://actualidad.rt.com/actualidad/368167-cientificos-rusos-vacuna-sputnik-medicos-estadounidenses.

[263] ""Una candidata tan fuerte como las de Occidente": Bloomberg explica por qué se puede confiar en la vacuna Sputnik V," *RT,* January 10, 2021. Available at: https://actualidad.rt.com/actualidad/379671-bloomberg-confiar-vacuna-sputnik-v-coronavirus-rusia.

[264] ""Un logro genuino": Periodista de The New York Times explica por qué decidió vacunarse con la Sputnik V," *RT,* January 9, 2021. Available at: https://actualidad.rt.com/actualidad/379633-periodista-nyt-vacuna-sputnik-argumentos.

[265] ""No entiendo por qué Occidente la ignora": Oliver Stone tras aplicarse la vacuna rusa Sputnik V," *Sputnik Mundo,* December 16, 2020. Available at: https://mundo.sputniknews.com/20201216/no-entiendo-por-que-occidente-la-ignora-oliver-stone-tras-aplicarse-la-vacuna-rusa-sputnik-v-1093848103.html.

[266] ""Se ve fantástica": Nobel de Medicina aplaude la eficacia de la vacuna rusa Sputnik V," *RT,* February 4, 2021. Available at: https://actualidad.rt.com/actualidad/382476-nobel-medicina-eficacia-vacuna-sputnik.

Lancet[267] and the U.S.authority on infectious diseases,[268] to *Bloomberg* considering it "Russia's greatest scientific advance since the USSR,"[269] or even to an Austrian doctor comparing it to the Kalashnikov assault rifle for its "simplicity, robustness and efficacy."[270]

The above examples illustrate the effort of the Russian media to convince Spanish-speaking audiences that the Russian vaccine works better than those of its Western competitors This strong support is also intended to demonstrate Russia's excellence and to send the message that theRussia that has been despised and sanctioned by the West is capable of being part of the world's scientific elite, with even better results than developed countries.

While *Sputnik* and *RT* support the international legitimization of the Russian vaccine with the dissemination of positive news linked to foreign personalities, institutions, or media, they also take care to neutralize any hint of criticism coming from abroad. For the time being, they sought to clarify, on their pages, the "publication of misleading articles" on the Russian vaccine,[271] denied the "myths and fake news about Sputnik V,"[272] and refuted the criticisms of the *Financial Times*, which stated that the European Medicines Agency (EMA) will investigate whether the clinical trials of the Russian drug contravened ethical and scientific standards.[273]

As is clear from Python's word-for-word analysis, *RT* and *Sputnik* not only presented the Russian vaccine in exclusively favorable terms, but lent themselves to link the vaccine's scientific success to the Kremlin's geopolitical achievements. This conclusion can be reached after counting up to 923 mentions - in 446 articles - of a cloud of 22 words associated with the geopolitical or diplomatic narrative. This narrative project the importance of the "supply" of the vaccine in a context of international shortages, as well

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[267] ""Vacuna para toda la humanidad": The Lancet valida la eficacia de Sputnik V en un 91,6%," *Sputnik Mundo,* February 2, 2021. Available at: https://mundo.sputniknews.com/20210202/vacuna-para-toda-la-humanidad-the-lancet-valida-la-eficacia-de-sputnik-v-en-un-916-1094303121.html.

[268] "Autoridad de EEUU en enfermedades infecciosas: la vacuna Sputnik V es "muy efectiva"," *Sputnik News,* March 22, 2021. Available at: https://mundo.sputniknews.com/20210322/autoridad-de-eeuu-en-enfermedades-infecciosas-la-vacuna-sputnik-v-es-muy-efectiva-1110260583.html.

[269] ""El mayor avance científico de Rusia desde la URSS": elogian en Bloomberg la Sputnik V," *Sputnik Mundo,* February 6, 2021. Available at: https://mundo.sputniknews.com/20210206/el-mayor-avance-cientifico-de-rusia-desde-la-urss-bloomberg-elogia-la-sputnik-v-1094351238.html.

[270] "Sencilla, robusta y eficaz: comparan la vacuna Sputnik V con el fusil de asalto Kalashnikov," *Sputnik Mundo,* February 21, 2021. Available at: https://mundo.sputniknews.com/20210221/sencilla-robusta-y-eficaz-comparan-la-vacuna-sputnik-v-con-el-fusil-de-asalto-kalashnikov-1109022167.html.

[271] "Creadores de la Sputnik V aclaran 7 hechos sobre la vacuna rusa tras la publicación de "artículos engañosos"," *RT,* December 8, 2020. Available at: https://actualidad.rt.com/actualidad/376096-siete-hechos-inmunizacion-masiva-sputnik.

[272] "La Embajada de Rusia en México desmiente mitos y 'fake news' sobre la vacuna Sputnik V," *Sputnik News,* January 29, 2021. Available at: https://mundo.sputniknews.com/20210129/la-embajada-de-rusia-en-mexico-desmiente-mitos-y-fake-news-sobre-la-vacuna-sputnik-v-1094265211.html.

[273] "Creadores de Sputnik V refutan la publicación de 'The Financial Times' sobre su fármaco," *Sputnik Mundo,* April 7, 2021. Available at: https://mundo.sputniknews.com/20210407/creadores-de-sputnik-v-refutan-la-publicacion-de-the-financial-times-sobre-su-farmaco-1110912336.html.

as the "cooperation" that Russia would be lending to the international community (see table).

Similarly, by linking these same terms with geopolitical and diplomatic connotations with the words "Rusia," "Moscú," "gobierno ruso," or "Kremlin," on 419 occasions both expressions were mentioned in the same sentence. This unequivocally points to the will of the Russian state media to transmit another of Moscow's official narratives: that of a powerful Russia within a multipolar world that has the will to expand its influence. As we will see below, this narrative is complemented -also in a geopolitical manner- with another narrative that the media disseminates around Western vaccines and which serves to criticize and question democracies.

In the same line of argumentation, both *RT* and *Sputnik* have emphasized the cooperation between Russia and Argentina in the field of vaccines, since Argentina was one of the first in the region - together with Mexico and Bolivia, among others - to decide to use Sputnik V to inoculate its population. According to Python, in the selection of 1,081 articles on Sputnik V, 1,437 allusions to Argentina were identified in 257 articles, not counting another 228 mentions of Latin America in 96 articles.

An in-depth analysis of the inventory of articles reveals that, of these 257 articles, 151 are devoted exclusively to Argentina's bid for the Russian vaccine. Of these, 62 articles of a clearly propagandistic nature describe in detail the air logistics, including the take-off and landing of a dozen flights, of the Russian vaccine on the Moscow-Buenos Aires route. There are another 26 reports on the efficacy of the vaccine and its authorization, distribution and vaccination in Argentina, while 18 articles refer to Argentine President Alberto Fernández, his support for the Russian vaccine, his thanks to Moscow, and the strengthening of relations between the two countries.

This exhaustive coverage of the evolution of Sputnik V in Argentina must necessarily be connected to the fact that Latin America - as in Eastern Europe - is a region in which Russia not only rivals the U.S. and Europe but considers it the perfect field of expansion for the multipolar world that Moscow wants. In this context, Russia courts non-traditional allies such as Argentina, as opposed to its traditional Latin American friends, namely Cuba, Nicaragua and Bolivia.

The fact that Argentina, Bolivia, Mexico, Nicaragua, Paraguay, Venezuela and other countries have opted - because "health has more weight than ideology" - for Sputnik V "may affect the formation of the post-pandemic world and the U.S. position in Latin America, a region that Washington considers 'its geopolitical backyard.'"[274] According to *RT*, which cites a CNN report, the distribution of Sputnik V in Latin America may "damage the prestige of the U.S. in the region."[275]

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[274] "CNN explica la popularidad de la vacuna rusa Sputnik V en América Latina," *Sputnik Mundo,* February 18, 2021. Available at: https://mundo.sputniknews.com/20210218/cnn-explica-la-popularidad-de-la-vacuna-rusa-sputnik-v-en-america-latina-1107942626.html.

[275] Ibid.

Mentions of key words linked to diplomacy and geopolitics

category	word	Sum of word_count	Sum of #_art	Sum of in_header
Menciones de palabras clave vinculadas a diplomacia y geopolítica				
(Eliminadas Stop Words y lematizadas)				
['Diplomacia y	suministro	342	137	124
	cooperación	221	93	46
	responsable	51	29	9
	ayuda	47	30	12
	diplomacia	34	16	6
	responsabilidad	21	16	2
	asistencia	20	14	5
	donación	19	9	5
	soberano	19	13	8
	victoria	18	11	9
	amistad	14	10	3
	donar	9	6	2
	soberanía	7	3	0
	liderazgo	6	5	1
	acaparamiento	4	4	0
	contribución	3	2	0
	distribuciónequitati	3	1	2
	ayudahumanitaria	1	1	0
	mundoendesarrollo	1	1	0
	cooperar	50	29	12
	geopolítico	30	14	6
	generoso	3	2	1
Grand Total		**923**	**446**	**253**

Sum of word_count	Nº de menciones de cada palabra
Sum of #_art	Nº de artículos en los que cada palabra es citada
Sum of in_header	Nº de veces que cada palabra es mencionada en el titular o frases subsiguientes

Diplomatic and geopolitical keywords mentioned in the same sentences as the Russian government

expresion	expresion buscada	Sum of word_count	Sum of #_art	Sum of in_header
Palabras clave de diplomacia y geopolítica junto a Rusia, Moscú, gob. ruso, o Kremlin en la misma frase				
(Eliminadas Stop Words y lematizadas)				
	suministro	179	74	74
	cooperación	110	49	34
	cooperar	29	17	5
	diplomacia	22	9	6
	ayuda	20	11	7
	donación	13	5	4
	responsable	12	9	4
	asistencia	9	5	4
	amistad	7	4	2
	victoria	5	2	2
	geopolítico	5	3	0
	generoso	3	2	1
	donar	2	2	1
	liderazgo	1	1	0
	responsabilidad	1	1	0
	contribución	1	1	0
Grand Total		**419**	**195**	**144**

Sum of word_count	Nº de menciones de cada palabra
Sum of #_art	Nº de artículos en los que cada palabra es citada
Sum of in_header	Nº de veces que cada palabra es mencionada en el titular o frases subsiguientes

Although *Sputnik* and *RT* take advantage whenever they can of the positive information about Sputnik V published in the Western media, they also invest considerable efforts in denouncing and dismantling what they consider to be a smear campaign, if not a disinformation campaign, by the West against the Russian vaccine. Both media parrot the Russian intelligence services' denunciation of the European Union's alleged attempt to denigrate the Sputnik V vaccine. According to them, the desire of EU representatives "to unconditionally follow the path of Washington's directives with respect to Russia is lately taking on grotesque forms," adding that Europeans cannot tolerate that Russia seeks to help other countries with its scientific achievements without obtaining commercial benefits.[276]

They also note the Kremlin's warning that there is "a massive campaign aimed at shaping a biased attitude towards Russian scientific advances,"[277] which is allegedly driven by the U.S.Agency for International Development, the George Soros Foundation, the BBC and Reuters, among others. All are enemies -the institutions, the big corporations, the media and the Western elites- in Moscow's political language. They are joined by an "army of trolls who have invaded the social networks with the clear objective of provoking fear and rejection" of the Russian vaccine,[278] as well as some Latin American media, whose "approach evokes the times of the Cold War" and whose "subordination to foreign interests" highlights the domination of the "Latin American media space by foreign actors, specifically the U.S."[279]

These "media barbarities" are used by many media to act as "lobbyists" for the Western world "where bashing the Russians is their usual typical discourse."[280] Frequently, *Sputnik* and *RT* support these denunciations in using the words of Latin American leaders allied with Russia, such as Evo Morales, who warned of "a political media campaign by the big consortiums that do business with health,"[281] or López Obrador, who mocked the "conspiracy theories" that claim that Sputnik V "contains a chip that turns those who

[276] "El Servicio de Inteligencia de Rusia denuncia intentos de denigrar la vacuna rusa en la UE," *Sputnik Mundo,* March 30, 2021. Available at: https://mundo.sputniknews.com/20210330/el-servicio-de-inteligencia-de-rusia-denuncia-intentos-de-denigrar-la-vacuna-rusa-en-la-ue-1110614246.html.

[277] "Fuentes en Kremlin advierten de campaña de desinformación de Occidente contra Sputnik V," *Sputnik Mundo,* March 12, 2021. Available at: https://mundo.sputniknews.com/20210312/fuentes-en-kremlin-advierten-de-campana-de-desinformacion-de-occidente-contra-sputnik-v-1109879119.html.

[278] "Sputnik V, atacado sin éxito por un ejército de 'trolls'," *Sputnik Mundo,* January 5, 2021. Available at: https://mundo.sputniknews.com/20210105/sputnik-v-atacado-sin-exito-por-un-ejercito-de-trolls-1094028276.html.

[279] "Campaña contra la Sputnik V: denuncian subordinación de medios latinoamericanos a intereses ajenos," *Sputnik Mundo,* December 15, 2020. Available at: https://mundo.sputniknews.com/20201215/campana-contra-la-sputnik-v-denuncian-subordinacion-de-medios-latinoamericanos-a-intereses-ajenos-1093832526.html.

[280] "¿Por qué "barbaridades" mediáticas contra Sputnik V constituyen amenaza mortal?," *Sputnik Mundo,* December 22, 2020. Available at: https://mundo.sputniknews.com/20201222/por-que-barbaridades-mediaticas-contra-sputnik-v-constituyen-amenaza-mortal-1093909991.html.

[281] "Evo Morales denuncia una campaña político-mediática contra la vacuna rusa Sputnik V," *Sputnik Mundo,* January 3, 2021. Available at: https://mundo.sputniknews.com/20210103/evo-morales-denuncia-una-campana-politico-mediatica-contra-la-vacuna-rusa-sputnik-v-1094014474.html.

receive it into communists."[282] Although Western "authorities, media and henchmen of occasion" have done their utmost to discredit it, Russian science has defeated the "propaganda machine of the West."[283]

With this approach, the Russian media promote the idea that Western authorities and the mainstream media are biased in their assessment and reporting of the Russian vaccine, while - according to them – are ignoring the dangers and safety suspicions of Western vaccines. Regarding the latter, it has been previously explained that, from the initial headline analysis of the block of 512 *RT* and *Sputnik* articles on Western vaccines, 124 presented them in negative terms because of their dubious efficacy or safety and another 20 objected to the practices of pharmaceutical companies. According to Python's finer analysis of those same 512 articles, Western vaccines are mentioned 3,393 times in 579 articles.

Menciones vacunas oocidentales		
(Eliminadas Stop Words y lematizadas)		
word	Sum of word_count	Sum of #_art
astrazeneca	1.503	225
pfizer	951	143
johnson	326	42
moderno	295	60
biontech	218	56
janssen	56	23
pfizerbiontech	22	12
oxfordastrazened	9	7
astrazenecaoxfor	6	4
astrazeneca/	3	3
moderna	2	2
pfizerbiotech	1	1
jansssen	1	1
Total general	**3.393**	**579**
Sum of word_count	Nº de menciones de cada palabra	
Sum of #_art	Nº de artículos en los que cada palabra es citada	

Below is a table of 62 negative words linked to the vaccine story is created, which we call "Vacuna negativo." These words are cited 1,894 times, as shown in the table below. We the refine the analysis by searching for the number of times that all these negative words in the category are linked, in the same sentence, to each of the Western vaccines. As a result these negative words coincide in the same sentence with one of the commercial names of Western vaccines 1,539 times (see table). Python counts that these phrases which include a negative term and the name of a commercial vaccine appear in 777 articles; and in 728 of them, this phrase is in the headline, subtitle, lead-in or first paragraph.

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[282] "López Obrador se burla de las teorías conspirativas contra la Sputnik V," *RT,* February 8, 2021. Available at: https://actualidad.rt.com/actualidad/382879-lopez-obrador-rie-burdas-teorias-sputnikv.

[283] "¿Victoria de la ciencia rusa contra la maquinaria propagandística de Occidente?," *Sputnik Mundo,* December 31, 2020. Available at: https://mundo.sputniknews.com/20201231/victoria-de-la-ciencia-rusa-contra-la-maquinaria-propagandistica-de-occidente-1094000780.html.

Menciones de palabras en categoría "Vacunas negativo"

(Eliminadas Stop Words y lematizadas)

category	word	Sum of word_count	Sum of #_art
'Vacuna negativo	suspender	225	83
	riesgo	186	75
	enfermedad	162	66
	coágulo	147	58
	grave	107	47
	muerte	95	43
	problema	95	40
	efectossecundario	91	45
	retraso	58	19
	suspensión	53	27
	reacción	52	17
	duda	46	19
	morir	43	27
	raro	39	23
	trombo	37	27
	retrasar	34	11
	complicación	29	19
	fallecer	26	18
	detener	26	15
	reaccionesadversas	23	13
	afección	21	12
	demanda	21	9
	alérgico	20	8
	trastorno	19	13
	suicidio	18	5
	inexplicable	13	6
	restricción	13	6
	muerto	12	7
	prohibición	11	6
	reaccionesalérgica	11	3
	alergia	11	8
	tensión	11	6
	incertidumbre	10	8
	rechazo	10	6
	veto	9	3
	demora	8	6
	humanitario	8	1
	fiebre	7	5
	desafío	7	5
	abuso	7	2
	fallo	6	2
	hospitalización	6	6
	hinchazón	5	4
	dolordecabeza	5	3
	brote	5	2
	interrupción	4	4
	revés	4	4
	lentitud	4	3
	intimidación	4	1
	desaconsejar	4	3
	interrumpir	4	3
	acusación	3	2
	reticencia	3	1
	escalofrío	3	3
	fatiga	3	2
	competición	2	1
	desconfianza	2	1
	escasez	1	1
	norecomendar	1	1
	escándalo	1	1
	tabú	1	1
	reaccionesgraves	1	1
	sinéxito	1	1
cuna negativo'] Total		1894	868
Sum of word_count	Nº de menciones de cada palabra		
Sum of #_art	Nº de artículos en los que cada palabra es citada		

Apariciones de la categoría "Vacunas negativo" con las vacunas occidentales en la misma frase

(Eliminadas Stop Words y lematizadas)

expresion	expresion buscada	Sum of word_count	Sum of #_art	Sum of in_header	
1	suspender	191	72	93	
	riesgo	100	48	25	
	coágulo	95	45	37	
	seguridad	77	39	20	
	enfermedad	74	37	37	
	eficacia	70	26	34	
	éxito	69	67	67	
	grave	56	26	21	
	efectossecundario	54	29	21	
	problema	54	22	23	
	muerte	46	21	20	
	retraso	44	13	25	
	suspensión	40	22	20	
	seguro	37	17	9	
	efectividad	35	11	19	
	reacción	28	11	17	
	eficaz	28	18	6	
	trombo	28	20	6	
	morir	27	16	16	
	protección	26	9	16	
	retrasar	25	8	19	
	complicación	24	16	5	
	inmunidad	20	7	14	
	duda	19	9	11	
	raro	19	12	9	
	detener	15	10	7	
	reaccionesadversas	15	9	11	
	fallecer	12	9	2	
	demanda	12	7	6	
	afección	11	8	2	
	trastorno	11	6	5	
	alérgico	11	5	8	
	pausa	10	7	8	
	inexplicable	10	5	6	
	restricción	9	3	5	
	efectivo	8	5	4	
	incertidumbre	8	7	2	
	prohibición	7	3	4	
	reaccionesalérgica	7	3	5	
	muerto	7	3	3	
	abuso	6	1	3	
	veto	6	2	6	
	fallo	6	2	5	
	tensión	5	3	4	
	respuestainmune	5	3	4	
	cuestionar	5	3	3	
	confíar	5	4	1	
	alergia	5	3	5	
	revés	4	4	2	
	desafío	4	4	1	
	intimidación	4	1	3	
	demora	4	4	1	
	interés	4	4	1	
	hospitalización	3	3	2	
	fiebre	3	2	2	
	reticencia	3	1	3	
	dolordecabeza	3	2	2	
	efectivaysegura	2	2	0	
	interrupción	2	2	0	
	interrumpir	2	2	1	
	hinchazón	2	1	1	
	brote	2	1	2	
	rechazo	2	2	1	
	desaconsejar	2	1	2	
	desconfianza	2	1	0	
	competición	1	1	1	
	incidente	1	1	0	
	sinéxito	1	1	1	
	reaccionesgraves	1	1	1	
	escándalo	1	1	0	
	segurayefectivo	1	1	1	
	esperanza	1	1	1	
	fiable	1	1	0	
	acusación	1	0	0	
Grand Total		**1539**	**777**	**728**	

Sum of word_count	Nº de menciones de cada palabra
Sum of #_art	Nº de artículos en los que cada palabra es citada
Sum of in_header	Nº de veces que cada palabra es mencionada en el titular o frases subsiguientes

It is noteworthy that, amid constant criticism of AstraZeneca, with claims that those inoculated with the vaccine would turn into monkeys (as the vaccine was allegedly developed from a chimpanzee virus), the smear campaign against AstraZeneca ended when AstraZeneca agreed with Sputnik V to do combined trials with their respective

vaccines. The above data show that a vicious smear campaign converted into a positive news environment for AstraZeneca overnight.[284]

This negative portrayal of Western vaccines in *Sputnik* and *RT* is not just limited to questioning their quality, efficacy, or safety. The Russian media take advantage of the perceived rivalry with Sputnik V and what is perceived from Moscow as a smear campaign against the Russian vaccine and against Russia, to cast the news coverage in a geopolitical light. This leads the media to enter fully into one of the official narratives most used by the Russian regime: discrediting Western governments, institutions, elites, corporations and values, highlighting and amplifying the dysfunctions of the system, the excesses and, in the case of the pandemic, the questionable management of Western governments.

In contrast to other issues, where Russian state media specifically target the U.S., in the coverage of vaccines it is the European Union that is in the spotlight. The aim is not so much Washington or Brussels, but to attack the enemy—the West—where it is perceived to be most vulnerable. And Europe—with its contradictions, the impact of the pandemic and vaccination shortcomings—was, in this context, an easy target. Pointing out the contradictions of democracy, provoking internal divisions and stirring up political or social tensions is one of the specialties of the Russian official media.

After the alleged Western campaign against the Russian vaccine, one of the episodes *Sputnik* and *RT* have emphasized most is the European refusal to authorize and purchase the Russian vaccine, in the midst of the vaccine shortage and the low rate of vaccination in the EU. Testimonies from various corners of the European geography, none of them of proven public notoriety, are used to question the Brussels policy: "an unacceptable and incomprehensible decision"[285] that Europe could only justify by "political, geostrategic and prestige issues," which would explain the European refusal and the fact that the Community purchase policy "has been self-limited to NATO vaccines."[286]

All this generates a "grotesque situation," because while the European authorities "show their inability to guarantee" vaccination, "viable offers such as Sputnik V continue to be ignored."[287] In its reasoning, the same article kicks the hornets nest while also striking a chord: "if the explanation is geopolitical, European citizens have every reason to be very

[284] Bret Schafer, "Influence Enza: How Russia, China and Iran have Shaped and Manipulated Coronavirus Vaccine Narratives," *Alliance for Securing Democracy*, March 6, 2021. Available at: https://securingdemocracy.gmfus.org/russia-china-iran-covid-vaccine-disinformation/.

[285] "La UE rechaza comprar la vacuna rusa Sputnik V ¿una acción sin sentido?" *Sputnik Mundo*, December 2, 2020. Available at: https://mundo.sputniknews.com/20201202/la-ue-rechaza-comprar-la-vacuna-rusa-sputnik-v-una-accion-sin-sentido-1093702597.html.

[286] Víctor Ternovsky,"Critican en el Congreso de España la apuesta por las 'vacunas OTAN´ e instan a considerar la rusa Sputnik V," *Sputnik Mundo* February 1, 2021. Available at: https://mundo.sputniknews.com/20210201/critican-en-el-congreso-de-espana-la-apuesta-por-las-vacunas-otan-e-instan-a-considerar-la-rusa-1094293057.html.

[287] Víctor Ternovsky,"Acusan a "burócratas europeos" de "jugar con la salud" de la ciudadanía al ignorar Sputnik V," *Sputnik Mundo*, January 27, 2021. Available at: https://mundo.sputniknews.com/20210127/acusan-a-burocratas-europeos-de-jugar-con-la-salud-de-la-ciudadania-al-ignorar-la-vacuna-rusa-1094245362.html.

angry. We are talking about human lives, broken families, suffering on an unimaginable scale." Sputnik also gives voice to Putin's criticism of the European authorities: "We do not impose anything on anyone, but (...) we ask ourselves what interests they defend and who they represent: the interests of the pharmaceutical companies or the interests of European citizens?" The Russian president then concludes in geopolitical terms: "And yet they try to give us lessons and impose their sanctions on us."[288]

Sometime later, the Russian media took advantage of the internal fissures in the EU, with voices from Hungary, Slovakia or Austria calling to consider the authorization of the Sputnik V vaccine or even announcing acquisitions, to rub salt in the wound of the European division. "There should be no geopolitical blinders on vaccines,"[289] *RT* published echoing the words of the Austrian Chancellor. And, in the midst of the debate, Russian media assured that "publicly the EU has dismissed the supply of Russian vaccines" as "a propaganda trick of an undesirable regime," while "behind the scenes the bloc is resorting to Sputnik V to vaccinate its 450 million inhabitants."[290]

The Kremlin media also trumpeted that the Russian vaccine "is making its way into Europe despite the obstacles," pointing out alleged "pacts" with Spain, Italy, France and Germany despite the fact that it has not even been approved by the European Medicines Agency.[291] The "Russian anti-pandemic weapon shakes Europe,"[292] concluded one article; "countries are queuing up, from all continents are asking us to lend them a hand with the vaccine,"[293] assured another; "the Sputnik V vaccine will also contribute, perhaps, to curb the 'anti-Russian hysteria' that is spreading throughout Europe," concluded a final article with an illustrative headline: "Europe, the Navalny virus and the Russian vaccine."[294]

[288] "'Esta gente trata de darnos lecciones': Putin cuestiona el rechazo de Europa a la vacuna Sputnik V," *Sputnik Mundo*, March 22, 2021. Available at: https://mundo.sputniknews.com/20210322/esta-gente-trata-de-darnos-lecciones-putin-cuestiona-el-rechazo-de-europa-a-la-vacuna-sputnik-v-1110261045.html.

[289] "'No debe haber anteojeras geopolíticas': Austria negocia la compra de un millón de dosis de la vacuna rusa Sputnik V," *RT*, March 30, 2021. Available at: https://actualidad.rt.com/actualidad/387964-austria-negociar-rusia-compra-vacuna-sputnik.

[290] "¿Impensable? La UE estudia la posibilidad de comprar la vacuna rusa Sputnik V," *Sputnik Mundo*, March 15, 2021. Available at: https://mundo.sputniknews.com/20210315/impensable-la-ue-estudia-la-posibilidad-de-comprar-la-vacuna-rusa-sputnik-v-1109960396.html.

[291] "Sputnik V se abre camino en Europa pese a las trabas," *Sputnik Mundo*, March 15, 2021. Available at: https://mundo.sputniknews.com/20210315/sputnik-v-se-abre-camino-en-europa-pese-a-trabas-1109979999.html.

[292] Denis Lukyanov, "La vacuna Sputnik V, el ´arma´ antipandemia rusa de nueva generación que sacude Europa," *Sputnik Mundo*, April 2, 2021. Available at: https://mundo.sputniknews.com/20210402/la-vacuna-sputnik-v-el-arma-antipandemia-rusa-de-nueva-generacion-que-sacude-a-europa-1110760432.html.

[293] "Moscú asegura que los países hacen cola para conseguir la vacuna rusa," *Sputnik Mundo*, February 9, 2021. Available at: https://mundo.sputniknews.com/20210209/moscu-destaca-que-los-paises-hacen-cola-para-conseguir-la-vacuna-rusa-1094372782.html.

[294] Luis Rivas, "Europa, el virus Navalni y la vacuna rusa," *Sputnik Mundo*, February 5, 2021. Available at: https://mundo.sputniknews.com/20210205/europa-el-virus-navalni-y-la-vacuna-rusa-1094345088.html.

Fueling Social and Political Chaos in Chile

One of the usual practices of *RT* and *Sputnik*, insofar as they were conceived as media battering rams of the Russian State with the purpose of serving national diplomatic and geopolitical interests, is to fuel social and political tensions and conflicts in the U.S. and Europe as well as countries regarded as allies of the West. Chile is an example of this, where the Russian media sought to stir up social chaos. This is part of the Kremlin's strategy to oppose or at least weaken Western democracies by exploiting the vulnerabilities of their system.

The various events experienced since October 2018 in the South American country offered the Russian media a unique opportunity to fulfill such a political objective. During the period of analysis of this work, three domestic circumstances converged that allowed the two Russian state media to deepen their strategy of discrediting the Chilean government and even questioning democracy's ability to function fully in Chile.

First, the social tensions and violence that had already been unleashed in Chile two years earlier were reproduced in 2020 and 2021, provoking protests, arrests, injuries, and deaths. This allowed *RT* and *Sputnik* to present their coverage of the events under the prism of social chaos and police violence, two of the usual narratives the Russian media uses to discredit Western democracy.

Secondly, new episodes of protests and violence surrounding the Mapuche community in Chile, whose conflict has lasted for over a century, contributed to the strengthening of this narrative.

Thirdly, in connection with the previous social protests, in October 2020, Chile's national plebiscite was held, aimed at initiating a constituent process to draft a new Constitution, which was overwhelmingly approved. Precisely, in the weeks prior to the popular consultation, *RT* and *Sputnik* discussed, with considerable news coverage, the 47th anniversary of the triumph of Pinochet's coup d'état and the fall of Salvador Allende.

In order to analyze the coverage of the interconnected news events above, we selected *RT* and *Sputnik* articles whose headlines deal specifically with the above topics, using different keywords to sift through them.[295] The resulting body of work contains 286 articles, classified by headline as follows:

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[295] Among others, the following words were chosen: "protestas sociales," "manifestaciones," "violencia policial," "golpe de Estado," "Pinochet," "Allende," "mapuche," "plebiscito" y "Constitución." Others such as "BID," "Claver-Carone" or "Malvinas" were also included, in order to include in the analysis the coverage of other news related to Chile, Argentina or Peru that *RT* and *Sputnik* take advantage of to disseminate their narratives.

Titulares sobre Chile por temática

Protestas sociales y violencia	143
Plebiscito Nacional	37
Aniversario del golpe de Estado	29
Mapuches	22
Otros	54
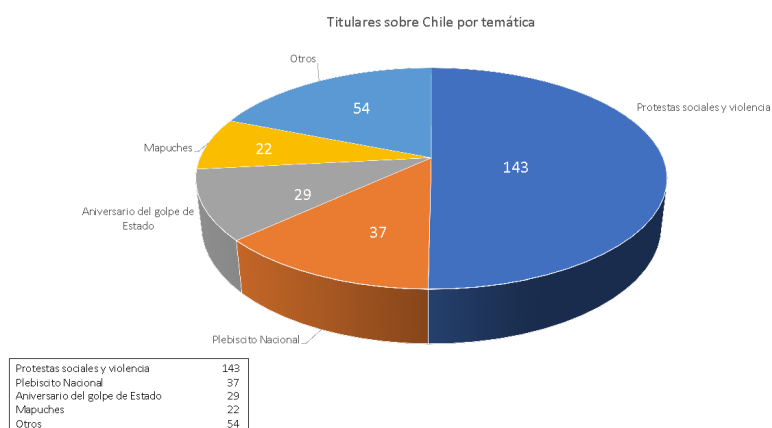
The analysis of the Python tool, which breaks down the content sentences into words, confirms that the narrative linked to social tensions is articulated around police brutality and social discontent. This conclusion is reached in the following way:

Two categories of words are first created, which are linked to the news events that occurred in Chile on those dates, as described in the previous paragraphs. They consist of the following:

CATEGORY 1	SELECTED WORDS
SOCIAL TENSIONS	carabinero, protesta, policía, estallido social, detenido, herido, víctima, represión, detener, cañón, ataque, reprimir, manifestar, muerto, gas lacrimógeno, disturbio, violencia, nueva protesta, estallido, brutalidad, masiva protesta, arder, caos, extrema derecha, ultraderecha
Mapuche conflict	mapuche, querella, amenazar, genocidio, indígena, lucha mapuche

CATEGORY 2	SELECTED WORDS
National plebiscite	Plebiscito, nueva constitución, constituyente
History	Pinochet, dictadura, allende, golpe de estado, asesinato, crimen, derrocar, tortura, desaparecido, golpe militar

The aim is to qantify in three ways: the number of times these words are mentioned in the 286 articles analyzed; how many articles mention these words; and finally, the number of times these words are mentioned in the headline and/or in the first sentences of the article.

The result is conclusive. The thirty or so words in "Category 1" are cited 1,999 times in 286 articles, among which 601 mentions are associated with a narrative of social unrest (protesta, estallido social, manifestar, disturbio, violencia, nueva protesta, estallido, masiva protesta, arder, caos). Meanwhile, another 1,153 are linked to a narrative of police brutality or repression (carabinero, policía, detener, herido, detener, cañón, ataque, repress, repress, muerto, gas lacrimógeno, brutalidad, víctima, represión). The remaining 245 mentions are associated with the so-called Mapuche conflict (see table below).

Coverage of social tensions in Chile by *RT* and *Sputnik*/Analysis using Python terms

category	word	Sum of word_count	Sum of #_art	Sum of in_header
['tensiones sociales'				
	carabinero	320	107	150
	policía	283	103	153
	detenido	139	65	65
	herido	62	40	21
	víctima	61	41	24
	represión	55	34	27
	detener	54	34	27
	cañón	43	23	29
	ataque	43	20	10
	reprimir	34	25	22
	muerto	28	24	8
	gaslacrimógeno	27	20	15
	brutalidad	4	3	2
	extremaderecha	1	1	1
	ultraderecha	1	1	1
	total	**1155**	**541**	**555**
	protesta	294	110	135
	estallidosocial	201	84	92
	manifestar	33	24	13
	disturbio	23	11	16
	violencia	18	15	3
	nuevaprotesta	14	8	14
	estallido	14	11	3
	masivaprotesta	2	1	1
	arder	1	1	1
	caos	1	1	1
	total	**601**	**266**	**279**
	mapuche	185	25	49
	querella	26	13	14
	amenazar	12	11	3
	genocidio	9	4	3
	indígena	7	6	1
	luchamapuche	4	3	3
	total	**243**	**62**	**73**
['tensiones sociales'] Total		**1999**	**869**	**907**
	Narrativa represión policial			
	Narrativa descontento social			
	Narrativa conflicto mapuche			
Sum of word_count	Nº de menciones de cada palabra			
Sum of #_art	Nº de artículos en los que cada palabra es citada			
Sum of in_header	Nº de veces que cada palabra es mencionada en el titular o frases subsiguientes			

Not only are these words prevalent in RT and Sputnik's coverage of social tensions, which undoubtedly signals their approach, but they are also mentioned repeatedly in a high number of articles (869). Even more important, these mentions appear 907 times in a prominent place in the article, i.e., in the headline, in the subtitle, in the lead-in, or in the first paragraph.

From the in-depth analysis of the contents, the criminalization of the Chilean police and carabineros by Sputnik and RT is made clear. The Russian media frequently allude to the

Chilean police "repressing"[296] demonstrators, organizing "violent operations"[297] and displaying "police brutality,"[298] sometimes against "peaceful demonstrators."[299] And, punctually, they "shot a man who was stealing a vehicle"[300] or "shot dead"[301] an artist in the middle of the street, considered a "murder"[302] that generated "massive riots." According to the Russian media, due to the violence of the police and the ultra-right wing, journalists in Chile are exposed to "imminent danger,"[303] a threat that Sputnik exposes in a single article suggesting a tacit connection between these two threats to journalists.

This threat of "imminent danger" to journalists is supported by Sputnik with information that its correspondent in Chile was "gassed by the carabineros"[304] and that she was "threatened by the ultra-right."[305] This police violence also targeted the Mapuche community, one of whose members "was killed by a shot he received in the back" at the hands of the carabineros. The violence surrounding the so-called 'Mapuche conflict' leads

[296]"Carabineros de Chile reprimen una nueva protesta contra el Gobierno de Piñera en Santiago," *RT*, March 6, 2021. Available at: https://actualidad.rt.com/actualidad/385535-carabineros-chile-reprimir-nueva-protesta-gobierno.

[297]"El jefe de carabineros dimitido por un violento operativo es reemplazado por un oficial clave en la represión de las protestas chilenas en 2019," *RT*, November 20, 2020. Available at: https://actualidad.rt.com/actualidad/374086-ricardo-yanez-nuevo-jefe-carabineros-chile.

[298] "Asistentes denuncian brutalidad policial en protesta contra Piñera en Chile," *RT*, November 21, 2020. Available at: https://actualidad.rt.com/video/374293-asistentes-denunciar-brutalidad-policial-protesta-pinera.

[299]"Policía chilena reprime pacífica manifestación feminista en el centro de la capital," *Sputnik Mundo*, March 8, 2021. Available at: https://mundo.sputniknews.com/20210308/policia-chilena-reprime-pacifica-manifestacion-feminista-en-el-centro-de-la-capital-1109661999.html.

[300] "Un carabinero abate a un hombre que intentaba robar el vehículo oficial del ministro de Hacienda en Chile," *RT*, November 30, 2020. Available at: https://actualidad.rt.com/actualidad/375295-chile-abaten-delincuente-auto-ministro-hacienda.

[301] "Policía chileno mata a balazos a un artista callejero que se negó a un control," *Sputnik Mundo*, February 5, 2021. Available at: https://mundo.sputniknews.com/20210205/policia-chileno-mata-a-balazos-a-artista-callejero-que-se-nego-a-un-control-1094347014.html.

[302]"El asesinato de un aristsa callejero genera protestas y disturbios masivos en Chile," *Sputnik Mundo*, February 9, 2021. Available at: https://mundo.sputniknews.com/20210209/el-asesinato-de-un-artista-callejero-genera-protestas-y-disturbios-masivos-en-chile-1094373567.html.

[303] "Carabineros y ultraderecha: un peligro inminente para los periodistas en Chile," *Sputnik Mundo*, October 22, 2020. Available at: https://mundo.sputniknews.com/20201022/carabineros-y-ultraderecha-un-peligro-inminente-para-los-periodistas-en-chile-1093222652.html.

[304] Carolina Trejo, "Chilenos queman banderas y se enfrentan con carabineros a 47 años del golpe de Estado," *Sputnik Mundo*, September 9, 2020. Available at: https://mundo.sputniknews.com/20200912/corresponsal-de-sputnik-en-chile-gaseada-por-carabineros-1092740655.html.

[305] "Corresponsal de Sputnik en Chile, amenazada por grupos de ultraderecha," *Sputnik Mundo*, October 18, 2020. Available at: https://mundo.sputniknews.com/20201018/corresponsal-de-sputnik-en-chile-amenazada-por-grupos-de-ultraderecha-1093163545.html.

Sputnik to wonder if "the Mapuche people are an internal enemy of the Chilean State"[306] or if there are "paramilitary groups" operating in the Araucanía region.[307]

All this explains why "nine out of ten complaints" in Chile are against the police,[308] or why 2,520 complaints were filed against the agents "for violating human rights."[309] As a consequence of the actions of the Chilean militarized police- "a police force in constant crisis,"[310] - the year 2020 "ended up sinking" the carabineros and "a large part of the population changed its position on the institution."[311] "The violent actions of the carabinieri," Russian state media explain, "outrage the citizenry."[312]

The Russian media connect police violence and social discontent in Chile with the national plebiscite held at the end of 2020 and, retrospectively, with the anniversary of Pinochet's coup d'état that overthrew Salvador Allende. The image of the Chilean dictator, almost half a century after the coup and when Chile is ready to definitively turn that page of Chilean history with the new constituent process initiated by the national plebiscite, is still very present in the coverage of the Russian state media as it perfectly fits the geopolitical purposes it intends to serve.

The table below shows the words of "Category 2" that are associated to this Russian media's linking of Chilewith the ghost of its dictatorial past. This is a past that the Russian media also take care to remind Chile that was in communion and alliance with the U.S.. The group of words associated with Pinochetismo, among them "dictadura," "asesinato," or "tortura," are mentioned 546 times in Python's analysis.

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[306] Carolina Trejo, "¿Es el pueblo mapuche un enemigo interno del Estado chileno,? *Sputnik Mundo*, January 16, 2021. Available at: https://mundo.sputniknews.com/20210116/es-el-pueblo-mapuche-un-enemigo-interno-del-estado-chileno-1094133399.html.

[307] Carolina Trejo, "¿Paramilitarismo en el territorio mapuche chileno?," *Sputnik Mundo*, January 16, 2021. Available at: https://mundo.sputniknews.com/20210414/paramilitarismo-en-el-territorio-mapuche-chileno-1111138803.html.

[308] "9 de cada 10 querellas presentadas por el INDH de Chile fueron contra la policía," *RT*, October 16, 2020. Available at: https://actualidad.rt.com/video/370142-querellas-presentadas-indh-chile-contra-policia.

[309] "El instituto de DDHH de Chile presenta 2.520 querellas contra agentes por violar derechos," *Sputnik Mundo*, October 16, 2020. Available at: https://mundo.sputniknews.com/20201016/el-instituto-de-ddhh-de-chile-presenta-2520-querellas-contra-agentes-por-violar-derechos-1093150375.html.

[310] Carolina Trejo, "Carabineros de Chile: una policía en constante crisis," *Sputnik Mundo*, October 9, 2020. Available at: https://mundo.sputniknews.com/20201009/carabineros-de-chile-una-policia-en-constante-crisis--1093064670.html.

[311] Francisco Bravo Atias, "2020: el año en que se terminó de hundir la policía chilena," *Sputnik Mundo*, December 30, 2020. Available at: https://mundo.sputniknews.com/20201230/2020-el-ano-en-que-se-termino-de-hundir-la-policia-chilena-1093995445.html.

[312] "Acciones violentas de carabineros indignan a la ciudadanía de Chile," *RT*, October 4, 2020. Available at: https://actualidad.rt.com/video/368747-acciones-violentas-carabineros-indignar-ciudadania-chile.

Mentions of words associated with the narrative of Pinochet's Chile

category	word	Sum of word_count	Sum of #_art	Sum of in_header
['historia']	pinochet	146	56	58
	dictadura	131	64	47
	allende	67	21	30
	golpedeestado	47	24	28
	asesinato	46	21	14
	crimen	38	23	15
	derrocar	26	15	11
	tortura	21	14	5
	desaparecido	13	9	6
	golpemilitar	11	6	6
['historia'] Total		**546**	**253**	**220**
['coyuntura política']	plebiscito	159	70	58
	nuevaconstitución	129	53	50
	constituyente	94	33	30
['coyun. política'] Total		**382**	**156**	**138**

CONCLUSIONS

This paper confirms China's enormous efforts to disseminate its official narratives—which can also be considered propagandistic—to Latin American audiences. This is a long-standing effort, stemming from Beijing's desire to change the negative perception of China that exists in many parts of the world. That negative image is, according to the communist regime, spread by the Western media and aimed at isolating China and promoting Western values.

Undoubtedly, Beijing's media offensive has focused heavily on reaching international audiences with its own narrative to try to change -therewith- the previous perception. Now, , with the COVID-19 pandemic and the havoc it has wreaked, Beijing has found itself in the even more pressing need to give its own version of events not only in order to evade its responsibility for the health crisis, but also to present itself to the international community as a great power in the making. China is portraying itself as a power that is responsible, generous and confident in its development model and its own strengths.

This study is approached in exactly this context. In it, the official Chinese media show their unequivocal commitment to defending Beijing's interests rather than reflecting the facts accurately, as would be appropriate in political systems where the media are theoretically independent and play a counter-power role. Therefore, we cannot consider *Xinhua*, *CGTN*, *China Radio International* and *People Online* as media in their classical conception, but as mere transmission belts of power. They are beholden to the Chinese Communist Party (CCP), not to the truth.

Understandably, the coverage of the vaccines that the aforementioned media have disseminated in their Spanish editions for Latin America and the rest of the Hispanic world is marked by this characteristic of Chinese media. As has been explained, the narrative center of gravity around the pandemic in the period under analysis consisted, fundamentally, in presenting Chinese vaccines as the solution to the serious crisis plaguing the world and, by elevation, as proof of China's emergence as a scientific and

technological power. In this context, Sinovac and Sinopharm vaccines had to be considered effective and safe in order to be accepted internationally.

The entire official narrative was built around this idea. However, with the failure to publish the breakdown of phase 3 clinical trial data, and with so much fragmented or contradictory information surrounding their vaccines and given the lack of transparency that generally surrounds the Chinese regime, voices were raised warning about the low efficacy of both vaccines. International mistrust forced the Chinese media to concentrate their narrative efforts around disproving such suspicion. Their narrative was based on two ideas, both of dubious veracity.

The first was to showcase the efficacy and safety of Chinese vaccines as an indisputable truth. However, at no time during the development of the vaccines was the Chinese press able to defend this assertion with solid scientific evidence and data, mainly because at no time did the Chinese biotech companies—and, therefore, neither did the official media— exhibit the main evidence that would have served to defuse all suspicions: the breakdown of data from Phase 3 trials.

However much the official media defended—time after time—the excellence of Chinese vaccines, the fact is that they did not do so with the only irrefutable argument—the scientific evidence—but on the basis of selective dissemination of information, omitting part of the data or manipulating the information even on the basis of information irrelevant to the case, such as the systematic legitimization of the vaccine by dozens of world political leaders. Therefore, it is not difficult to conclude that, as long as the Chinese media did not present any scientific certainty, the construction of the story around the success of the Chinese vaccines was based on information that was questionable.

The second idea is that, for the very purpose of endorsing their vaccines, the Chinese media referred to the efficacy and safety of Western vaccines in such negative terms that it is difficult to reconcile their story with reality. It is true that, as a result of the transparency required in democracies, the health problems of Western vaccines in their development phase were made public. But the way in which this circumstance was portrayed in the Chinese media agencies, together with the insistence on pointing out the weaknesses of rival vaccines, could well be considered an example of disinformation insofar as they offered Latin American audiences a clearly distorted version of the facts.

These were not the only examples of misinformation. Even more indisputable is the weakness of the argument behind China's supposed "victory" in the total eradication of extreme poverty in its country. As we have seen in the corresponding section, the thesis underpinning this whole triumphalist idea is based on an inaccuracy. Had the criterion used to set the poverty threshold that really corresponds to China according to its level of wealth, not only would it not have been possible to claim "victory," but there would be at least 200 million people living in extreme poverty in China.

This glaring omission or selective interpretation of the data allows Beijing to construct a narrative that, although adulterated, serves to project an attractive narrative around the success of the Chinese development model and the achievements of the CCP. The analysis in this paper suggests that the omission in question goes largely unnoticed by the public,

allowing the idea of Chinese success in alleviating poverty to make its way almost untouched in the Latin American media. Both the mythological image of China's transformation over the past four decades and the scant knowledge about the country contribute to this. What does not fit the stereotype is hardly questioned.

Twisting the facts to hammer out a narrative aligned with its interests also serves Beijing to deploy a seductive argument aimed at the developing world, including Latin America. The narrative around the development and "equitable distribution" of Chinese vaccines, given that they have not been authorized for marketing in the U.S. and Europe, is full of winks to these audiences with repeated references to the cooperation, donations and aid that Beijing offers. However, beyond the rhetoric of closeness to the region to position itself as a reference, it became evident that the way in which the Chinese media presented Beijing's adherence to the COVAX program contained another fundamental weakness: the omission of the fact that China joined reluctantly and after 165 countries had already done so.

Chinese propaganda's description of China's management of COVID-19, the success of Chinese vaccines and achievements in poverty alleviation also serves as a springboard for extolling the supposed virtues of China's political system. A model presented as superior to democracies and which, according to the Chinese media, can serve as an inspiration for Latin America. This is a narrative truffled with official slogans which, moreover, are often openly hostile to everything that the West represents politically. This is a turning point since its criticisms until recently were punctual and much less direct.

In this sense, the propaganda that China disseminates through its media tries to promote the idea of the suitability of the Chinese model of governance, denigrating that of democratic systems on the basis of their ineffective response to the pandemic, as well as their perceived inability to face certain challenges. This argument is joined, more vehemently and with a good dose of sensationalism, by the Russian media, always ready to discredit Western governments, institutions, companies, elites, and values and to amplify the dysfunctionalities of the system. Although there may be true elements in this story, the construction of this selective and artificial narrative could very well pass as an example of disinformation.

In this regard, it is striking how the Chinese official media have managed to construct an alternative narrative on human rights, its traditional weak link. The argument focuses, on the one hand, on linking the CCP's management during the pandemic and what it has meant in terms of protection of life to present it as an example of its commitment to human rights. And, on the other hand, in linking China's achievements in poverty reduction with the protection of human rights. A fallacious approach that, beyond the political discussion, collides with the reality of the human rights situation in that country, as attested by the rankings that place China as one of the countries in the world where human rights are most violated.

Generally speaking, it does not appear that these official narratives are making a significant impact on the mainstream media in Argentina, Chile and Peru. They may speak of Chinese "aid" in the context of COVID-19, with its donations of health material first and its distribution of vaccines later, but the other narratives, especially those extolling

the virtues of the Chinese model and denigrating the West and its democratic values, are largely absent.

The exceptions to this general trend are, on the one hand, media ideologically close to what China and the CCP stand for, which are more inclined to reproduce propaganda, and, on the other hand, the public media of Argentina and Peru, mainly the daily *El Peruano* and the news agencies *Télam* and *Andina*, whose relationship with the Chinese embassies and media goes back several years. By virtue of this, not only are they very careful not to select critical or sensitive news from among what is published about China, they disseminate official narratives faithfully and without a hint of criticism. Their audiences thus receive information about China with a significant bias.

The three aforementioned media also do not hesitate to use Chinese embassies as a source of their information. In fact, the embassies play an important role not only for the dissemination of propaganda and disinformation through Twitter and their communiqués, but also for the content of these, in which they dare to censor, criticize, and disavow, sometimes with unusual virulence, the negative coverage of China by certain media. In this sense, they try to impose the Chinese regime's vision of the role that the media should play in the system, which is none other than submission to political power.

Another effect of Beijing's strategy in the field of communication is the growing influence of the paid content that the *China Media Group* platform inserts in the main newspapers of Chile and Argentina. Favored by the design of the websites and the layout of the news, this sponsored content is not always distinguishable from the rest of the news, since its format is not the classic one of institutional advertising, which is easily identifiable, but real news. In fact, some of these news items are not limited to sharing a positive narrative about China, but are aimed at criticizing the U.S. and the Western world.

Finally, this study confirms the importance of institutions and individuals who, because of their proximity to Beijing, disseminate Chinese propaganda and official narratives through social networks. They are actors who, due to their knowledge of the Asian country, are perceived as authoritative voices on the subject, even if a good number of them have at some point been part of exchange programs or elite recruitment programs in the Chinese government's sharp power strategy. Although the academic community is particularly active in defending Beijing's vision, in general, beyond being influential in their field, the so-called "allies" do not play a decisive role in disseminating these narratives to the rest of society.

Medianálisis - Venezuela

EXECUTIVE SUMMARY

This report examines disinformation across public and private media channels in Venezuela through the analysis of news related to Russia and China, as well as content published by the Venezuelan government on its Twitter and Facebook accounts. Content from the Twitter accounts of Russia Today (RT), Telesur, and Sputnik Mundo was also reviewed to showcase what was qualitatively described as the core of the disinformation ecosystem in Venezuela coming from foreign authoritarian powers. The study found that Russia and China are overtly promoting disinformation in Venezuela, bolstering the Maduro government, and eroding the country's democratic institutions with the help of Venezuela's own military and high-level government officials. This report also demonstrates, through careful monitoring of traditional and non-traditional media sources, the concerted efforts from Russia and China, with Venezuela as their regional pivot, to sway neighboring countries to adopt their geopolitical agenda and to disrupt the institutions of those whose current leaders have partnered with the United States.

Context

For more than twenty years, Venezuela has been immersed in a political crisis—in which an authoritarian regime that initially rode to power by way of an electoral crisis in 1998 has increasingly consolidated its hold on Venezuelan society, especially through the dismantling and takeover of democratic institutions.

The crisis has resulted in serious consequences for Venezuela. The economy has been in recession for seven years, with three years of hyperinflation (Econalítica, 2021) causing a widespread increase in poverty reaching 96 percent of households, according to the Survey on Life Conditions conducted by the Institute of Economic and Social Research at the Andrés Bello Catholic University in 2020. According to the same study, at least one in four Venezuelan households is food insecure. According to the Food and Agriculture Organization of the United Nations (FAO, 2021), Venezuela is among the 25 countries around the world at heightened risk of food insecurity.

The economic and political situation has triggered an unprecedented exodus in the region. According to the United Nations Refugee Agency (UNHCR, 2021) the greatest migration crisis in the world is no longer in the Middle East or Africa; it is in Latin America, due to the 5.6 million Venezuelans who have fled their country in search of better living conditions.

Acuña-Alfaro and Khoudour (2020) have documented that Venezuelan migrants and refugees are especially concentrated in Colombia, Ecuador, and Peru, countries that saw their Venezuelan migrant populations increase 66 percent between 2010 and 2019.

Naturally, the slide towards autocracy led to the restriction of the system of civil liberties established in the Constitution of the Bolivarian Republic of Venezuela, especially the freedoms of expression and information. Hundreds of traditional private media companies were forced to shut down, change their editorial line, or be sold to pro-government interests. Medianálisis (2020) has estimated that between 2013 and 2018, 71 print publications in Venezuela have changed their distribution, migrated to an online-only format, or have closed, while 144 radio stations have been shut down by the National Telecommunications Commission (CONATEL) regulatory agency.

Additionally, dozens of independent journalism portals and international television channels have been sanctioned or blocked by CONATEL under restrictive journalism legislation.

Social media networks now represent an important outlet for interaction and information among Venezuelans. According to the report "We are social" (2020), there are 12 million social media users in Venezuela, with Facebook, Instagram, and Twitter being the most popular platforms. In addition, the report indicates that 81 percent of Venezuelans regularly connect to interactive media platforms through their mobile devices.

It is important to add that the deterioration of public services, such as electricity and the internet, contribute decisively to government control over the public sphere. In March 2019, all of Venezuela was without electricity for five days, due to a failure in the country's main hydroelectric plant. Since then, daily power outages, especially in the interior, have only intensified.

According to the Committee for People Affected by Blackouts (Depablos, 2021) at least 38,004 power failures were registered in the first quarter of 2021.

According to CONATEL, the main internet provider in Venezuela is the public access service CANTV-ABA, which accounts for 66.4 percent of internet subscribers (Arvelais, 2021). CANTV-ABA, however, works only intermittently and blocks numerous independent informational portals, limiting citizens' access to information.

Satellite internet and fiber optic services are now offered but remain unaffordable for the vast majority of Venezuelans, whose salaries are well below average for the region (and continue to depreciate amid the country's ongoing economic and financial crisis).

Consequently, the government's hegemony over communications outlets has solidified over the past five years. Bisbal (2011) has identified this as the state's main strategy for ensuring the primacy of its ideology. The ideological hegemony of "Bolivarian socialism" was spearheaded by the late President Hugo Chávez, who ordered the creation of a multitude of state-run media outlets, which have come to dominate the airwaves.

In this context, it is easier for the Venezuelan state to produce disinformation that generates repercussions at home and abroad. According to Trepiccione (Cañizález, 2020), Venezuela "has become a great laboratory for the manufacturing of fake news for some years now, insofar as the Venezuelan problem ceased to be a local political conflict and gave way to a global geopolitical and geostrategic dispute."

The study was conducted based on the following two assumptions:

- The governments of Russia and China are coordinating and conducting disinformation activities in Venezuela.

- The Venezuelan state, through its state-run media outlets, is actively participating in disinformation activities.

The topics addressed by this study are detailed below. The results stem from an analysis of Russian and Chinese media outlets, followed by a geopolitical analysis.

RUSSIA

Sputnik and EpiVacCorona Vaccines

This study looks at the Twitter accounts of RT, Telesur, and Sputnik. Social media accounts of Venezuelan government actors that follow these outlets were also identified, including Venezolana de Televisión (VTV), vice president Delcy Rodríguez, and Nicolás Maduro, as disclosed in the following table:

Table 1: Venezuelan government accounts that follow Russian media

from_user_bot:	from_user_scre	id	original_query
0.7	VTVcanal8	GobVe	SputnikV
0.36	AquiConErnesto	GobVe	SputnikV
0.75	ViceVenezuela	GobVe	SputnikV
520.294	CarnetDLaPatria	GobVe	SputnikV
0.45	drodriven2	GobVe	SputnikV
708.113	DianaIndustrias	GobVe	SputnikV
0.26	Mippcivzla	GobVe	SputnikV
323.988	LaHojillaenTV	GobVe	SputnikV
0.59	bloque_patria	GobVe	SputnikVLlegaAVene
0.31	NicolasMaduro	GobVe	SputnikVLlegaAVene
900.614	MisionRSOficial	GobVe	SputnikVLlegaAVene
0.67	CancilleriaVE	GobVe	SputnikVLlegaAVene
379.801	ErikaPSUV	GobVe	SputnikVLlegaAVene
515.643	ZE_Aragua	GobVe	SputnikVLlegaAVene
207.906	MarcoTorresPSUV	GobVe	SputnikVLlegaAVene
0.37	MercalOficial	GobVe	SputnikVLlegaAVene
596.776	ZEPortuguesa	GobVe	SputnikVLlegaAVene
	FundambienteOfc	GobVe	SputnikVLlegaAVene
495.058	somos_ejercito	GobVe	SputnikVLlegaAVene
959.028	GNB_Amazonas	GobVe	SputnikVLlegaAVene
0.88	Lechuguinos_com	GobVe	SputnikV
0.39	ConasGNBCmdte	GobVe	SputnikVLlegaAVene
0.45	GDP_Cabimas	GobVe	SputnikVLlegaAVene
835.829	hogardepatria	GobVe	SputnikV
0.54	GNBDesur32	GobVe	SputnikVLlegaAVene
0.71	CMDTEDESUR32	GobVe	SputnikV
0.33	CaracasUnefa	GobVe	SputnikVLlegaAVene
0.47	ConasGNB	GobVe	SputnikVLlegaAVene

The Hoaxy tool extracted #SputnikV hashtag data that reveals the hashtag was powered by Actualidad RT with the support of at least 54 bots and 152 additional accounts, which share many characteristics of *cyborgs*. Thus, state media outlets seek to praise Russian

support via distribution of the Sputnik vaccine, as opposed to vaccines developed in the United States. According to this narrative, these outlets uphold that the U.S. maintains a "block" against Venezuela, when there is really no such sanction. In fact, the U.S. Department of State has loosened sanctions to facilitate the acquisition of supplies to combat COVID-19.

When analyzing pro-government (PROGOB) and private media outlets indicated in the table below, results show that outlets neither elaborated on the subject matter, nor verified this information regarding vaccine distribution.

Table 2: News by media outlet and trend

Outlet	Tendency	Units
CDCCS	PROGOB	8
EFECTO COCUYO	PRIVATE	11
EL PITAZO	PRIVATE	17
CAROATA DIGITAL	PRIVATE	16
TELESUR	PROGOB	3
LA IGUANA TV	PROGOB	3
TAL CUAL	PRIVATE	6
LA PATILLA	PRIVATE	25
EL NACIONAL	PRIVATE	17
EL UNIVERSAL	PRIVATE	3
ÚLTIMAS NOTICIAS	PROGOB	9
CORREO ORINOCO	PROGOB	4
APORREA	PROGOB	4
BANCA Y NEGOCIOS	PRIVATE	2
2001	PRIVATE	3
TOTAL OUTLETS REVIEWED: 15 PROGOVT TENDENCY: 6 PRIVATE TENDENCY: 8		131

The analysis looks at three different moments: the announcement of vaccine registration on August 11, 2020; Maduro's statement saying he would be the first to be vaccinated; and finally, the alleged participation of Venezuela in the third phase of the vaccine trial. The vaccine rollout was regularly monitored during the investigation, including the contract signed between Venezuela and Russia and the arrival of the Sputnik vaccine; however, so far there is no official information on the arrival of the second doses of the vaccine.

As the last component of the investigation, 11 sources were selected, including official Venezuelan and Russian websites and public media outlets. This period of the study ran from June 1 to July 12, 2021. Data shared by the Minister of Education regarding the time extension between the delivery of the first and second doses of the Sputnik vaccine was

verified and compared with other sources, including the Ministry of Education website and two Russian media outlets.

The sources analyzed are detailed below:

Table 3: Media outlets

MEDIA OUTLET	WEBSITE
VTV	vtv.gob.ve
TELESUR	telesur.net
CORREO DEL ORINOCO	correodelorinoco.gob.ve
SPUTNIK MUNDO	mundo.sputniknews.com
RT	actualidad.rt.com

Table 4: Government sources

SOURCE	WEBSITE
MINISTRY OF HEALTH	mpps.gob.ve
SISTEMA PATRIA (NATIONAL ID SYSTEM)	covid19.patria.org.ve
MINISTRY OF FOREIGN AFFAIRS	mppre.gob.ve
VICE PRESIDENCY	Vicepresidencia.gob.ve
MINISTRY OF ECONOMICS AND FINANCE	mppef.gob.ve
MINISTRY OF COMMUNICATION AND INFORMATION	minci.gob.ve

Subsequently, the state television network VTV published a single informative piece on June 27, 2021 titled "Study in Argentina reveals that one dose of Sputnik V reduces mortality by up to 80 percent in those over 60 years of age." However, the article did not address the implications for Venezuela, nor did it mention the new norm of receiving a single dose in Venezuela. There was also no mention of this in the *Correo de Orinoco* state-run newspaper. The multistate TV network Telesur published an informative piece on its website on June 20 with the headline, "[Vice President] Delcy Rodríguez follows up on supply of vaccines in Russia." It used a tweet published on June 18 by the Vice President as reference. Telesur copied the story from the Vice President's website on the same date that the tweet was posted. The article details her meeting with the Russian Fund for Direct Investment "to follow up on the Delivery Plan for Sputnik V and Sputnik Light vaccines in Venezuela." The media spread misinformation by stating that "...in the midst of the economic sanction imposed by the U.S. government, the government continues to guarantee the protection and life of the Venezuelan people."

An analysis of the media outlets indicated above was conducted specifically with regard to the EpiVacCorona vaccine developed by the State Research Center for Virology and Biotechnology (VECTOR).

Discourse condemning North American imperialism, which the governments of Russia and Venezuela are united against, is prevalent in vaccine related news. The website of the Russian news agency Sputnik provides information explaining the delay in production and delivery of the second doses. RT also published four articles related to the delay. The headlines read: i) on June 23, "Moscow comments on reports about a shortage of the Sputnik V vaccine in Argentina"; ii) on June 26, "A study in Argentina reveals that a dose of Sputnik V reduces mortality by up to 80 percent in those over 60 years of age; iii) on June 29, "The Argentine laboratory Richmond announces that production of the second dose of Sputnik V will begin next Monday"; and iv) on July 12, "Sputnik V produces a high level of COVID-19 antibodies and neutralizers [*sic*] after a single dose, concludes an Argentine study published in the journal *Cell*." While they all refer to Argentina, nothing is said about Venezuela.

In addition, the articles published between May 4 and June 4, 2021 clearly note the presence of propaganda bias in public information, which have been used to divert attention away from the failure to deliver the second doses of the Sputnik vaccine as the government remains silent on the issue.

The investigation found that the regime's propaganda is even more noticeable around issues pertaining to Russia than to aid from China. On March 29, 2021, an announcement stated that the second dose of the Russian vaccine would be arriving in the country and that the Venezuelan volunteers would participate in the Phase III clinical trial of the vaccine. On March 30, the first doses arrived, and both events were celebrated simultaneously. Government spokespersons praised Vladimir Putin and took the opportunity to issue statements against the common enemy: the U.S.. These announcements were opportunistic in the wake of the Russian Deputy Prime Minister Yuri Borisov's visit to Caracas. After these events, there was no further discussion about the matter or the second dose. Furthermore, the document from the Ministry of Health authorizing its emergency use is unavailable. It is unknown how many doses arrived, what the protocol is for selecting trial candidates, the age range of volunteers, how much it costs, or how much each volunteer will be paid.

Vice President Rodríguez clearly expressed on behalf of the Maduro government that "[t]here is a contrast between Russia and China and the role played by some countries who are accumulating and hoarding vaccines with the aim of creating imbalance and asymmetry worldwide."

The RT Spanish portal echoed the tweets that the Minister of Science and Technology wrote about the vaccine on March 30 in an article titled: "Venezuela begins studies with the Russian vaccine EpiVacCorona." Oddly enough, it published an article with a similar headline on May 5, stating: "Venezuela starts Russian EpiVacCorona anti-covid vaccine clinical trials." In this piece, they reference Delcy Rodríguez's statement and a tweet from the Russian ambassador to Venezuela.

Additional information from three government websites was reviewed:

Table 5: Government websites

SOURCE	WEBSITE
MINISTRY OF HEALTH	mpps.gob.ve
SISTEMA PATRIA	patria.org.ve
MINISTRY OF COMMUNICATION AND INFORMATION	minci.gob.ve

On June 4, 2021, a month after the Russian ambassador to Venezuela was vaccinated, an agreement to export the second dose of the vaccine to Venezuela was announced during the St. Petersburg International Economic Forum. It was signed by Carlos Alvarado, the Minister of Health, and in the presence of Gabriela Giménez, the Minister of Science and Technology, and the Russian Minister of Industry and Commerce, Denis Manturov.

In the midst of disinformation circulating about the vaccines, the only government response was to impose lockdown. In comparison, most countries in the region had relaxed lockdown measures by this time, in order to mitigate the devastating effects of the pandemic on the economy and begin vaccination campaigns.

While reviewing media response, the usual live coverage by the state TV network VTV of the Maiquetia airport and tweets by Nicolas Maduro or Delcy Rodriguez were not complemented by further information on the VTV website. In the newspaper *Correo del Orinoco*, the topic of vaccines was not highlighted until the export agreement was signed. One brief article merely cited VTV as reference.

When reviewing the two Russian international media outlets, Sputnik agency and RT, no in-depth coverage was found regarding this topic.

The Sputnik agency only reported relevant information around the aforementioned dates. When the export agreement was signed, Carlos Faría, the Venezuelan ambassador in Moscow, was interviewed about the number of vaccines to be provided. The diplomat's response was: "the numbers are details that are being defined at this time." In other words, the agreement was signed; but the conditions are unknown.

In this review, information from 13 official sources were examined, starting with Venezuelan media outlets and comparatively including media in Argentina, Mexico and Bolivia. They all reproduced the misinformative nature of the information. The following table lists the outlets included in this analysis:

Table 6: Media outlets reviewed

OUTLET	WEBSITE
VTV	vtv.gob.ve
TELESUR	telesur.net
ÚLTIMAS NOTICIAS	ultimasnoticias.com.ve
EL ESTÍMULO	elestimulo.com
TAL CUAL	talcualdigital.com
EFECTO COCUYO	efectococuyo.com
EL ECONOMISTA	economista.com.mx
EL FINANCIERO	elfinanciero.com.mx
EL MUNDO	elmundo.com.bo
PAGINA SIETE	paginasiete.bo
LA NACIÓN	lanacion.com.ar
INFOBAE	infobae.com

The natural source of public information in this case are the media outlet websites. Local media coverage was reviewed and triangulated by media response in Argentina, Bolivia, and Mexico. This translates into the reproduction of information by 15 primary news sources spread over 12 media websites and three official government websites The content that was reviewed covers August 12, 2020, to February 13, 2021, spanning the period from the official announcements about vaccine delivery to the final publication date of this report.

Key dates include August 11, 2020, when Russia announced the Sputnik vaccine and Maduro almost immediately expressed his willingness to obtain it. In October, the signing of the agreement to send 10 million doses to Venezuela was announced. In February 2021, the first 100,000 doses arrived, but it remains unknown if the agreement will be honored and when the rest of the vaccine doses will arrive.

CHINA

The trace of disinformation is also reflected in the media coverage of news related to China. The supposed Chinese humanitarian aid that has been provided to numerous countries in the region has been praised by the Venezuelan government as an act of altruism.

Maggioreli (2019) notes that while the U.S. diminished humanitarian, military, and police aid in its backyard, China became a main source of support in the region and increased its aid and loans to Latin American governments. Throughout the research process, data suggests special treatment given to information about Chinese humanitarian aid and the Sinopharm vaccine. Information from 14 government media outlets was reviewed, dating from March 16, 2020, when the national quarantine strategy began, until September 2020. The official websites of the Ministries of Health, Economy, and Foreign Affairs were

examined to try and identify specific information about humanitarian aid. The table below lists the private and public media outlets examined:

Table 7: Media outlets that publish news about China's aid to Latin America

Outlet	Website	Tendency
Últimas Noticias	www.ultimasnoticias.com.ve	Progob
Efecto Cocuyo	www.efectococuyo.com	Private
El Universal	www.eluniversal.com	Private
El Nacional	www.elnacional.com	Private
Telesur	www.telesurtv.net	Progob
Alba Ciudad	www.albaciudad.org	Progob
La Iguana TV	www.laiguana.tv	Progob
Correo del Orinoco	www.correodelorinoco.gob.ve	Progob
VTV	www.vtv.gob.ve	Progob
Runrun.es	www.runrun.es	Private
La Patilla	www.lapatilla.com	Private
El Estímulo	www.elestimulo.com	Private
El Pitazo	www.elpitazo.net	Private
Venezuelan News Agency (AVN)	www.avn.info.ve	Progob

The analysis demonstrates that state media outlets echo official government propaganda. Private media outlets possess a similarly uncritical perspective toward information provided by the government, paving the way for the promulgation of disinformation in a society already ravaged by complex social, political, and economic crises.

Furthermore, the lack of transparency regarding the Sinopharm vaccine is one of the most obvious examples of disinformation that persists over time. It is worth noting that on March 1, 2021, 500,000 doses of the Chinese vaccine arrived in Venezuela, but neither government websites nor public or private media related to Chavez governance provide consolidated information regarding vaccine delivery. These websites also did not specify if these vaccines were a donation, even though Venezuela's participation in Phase 3 clinical trials was announced. Tables 8 and 9 below outline the media outlets and government sources that were examined.

Table 8: Media outlets analyzed in relation to Sinopharm in Venezuela

OUTLET	WEBSITE
VTV	vtv.gob.ve
TELESUR	telesur.net

SOURCE	WEBSITE
CORREO DEL ORINOCO	correodelorinoco.gob.ve
ÚLTIMAS NOTICIAS	ultimasnoticias.com.ve
AGENCIA XINHUA	spanish.xinhuanet.com

Table 9: Government sources consulted

SOURCE	WEBSITE
MINISTERIO DE SALUD	mpps.gob.ve
SISTEMA PATRIA	covid19.patria.org.ve
MINISTERIO DE RELACIONES EXTERIORES	mppre.gob.ve
VICEPRESIDENCIA	Vicepresidencia.gob.ve
MINISTERIO DE ECONOMÍA Y FINANZAS	mppef.gob.ve
MINISTERIO DE COMUNICACIÓN E INFORMACIÓN	minci.gob.ve

In addition, a director at VTV announced a week later that "teachers from 250 schools in Caracas received the first dose of the Chinese vaccine.

The truth is that the Venezuelan government gave special priority to the Sputnik vaccine, despite the fact that the 10 million vaccines promised to have not been delivered and the second doses are pending for hundreds of thousands of citizens. There was not the same precedence with the Sinopharm vaccine, and as previously stated, it was unknown whether it was a donation. This was verified by reviewing content from 10 sources between March 1 and May 3, including official government and media outlet websites, as well as the *Xinhua* agency website.

An anti-imperialist U.S. stance was found to be prominent in communications regarding Venezuela's relations with Russia, especially in the context of any event involving Nicolas Maduro. Information about the Chinese vaccine is scarce, aside from the announcement of the arrival of vaccines and their application in 250 schools in Caracas, without further detail on the number of teachers receiving the vaccine. Neither on the *Xinhua* news agency website nor on Telesur subdomain websites is there any information available about the Chinese vaccine.

Similarly, the narrative favoring Russia and China is also reflected in the criticisms and allegations in relation to the COVAX Global Vaccine program and the Pan American Health Organization (PAHO). According to these institutions, the exclusion of Venezuela from the program is justified and the AstraZeneca vaccine, the first vaccine set to arrive in Venezuela through this program, is discredited.

The reaction of Nicolas Maduro's government to the possibility of providing 1.4 to 2.4 million doses of British vaccine AstraZeneca (AZ) through the COVAX program is not convincing to many. The discreditation of this vaccine promoted by the government has no scientific basis because according to the World Health Organization, (WHO, 2021) the risk of developing thrombosis with thrombocytopenia is very low. In the United Kingdom, only four cases per one million vaccinated adults developed these adverse effects. It was

therefore recommended that authorities be alert and perform risk and benefits analysis based on the specific characteristics of each country.

Six government websites and six media outlets were reviewed from March 19-31, 2021. The analysis reveals the complexity of political interests around the vaccine issue and how it could reflect on Nicolas Maduro's government. It appears that Venezuela's entry into the COVAX program could be considered as a victory for *chavismo*, since it was handled as a proposal in conjunction with the "interim government" led by the former president of the National Assembly (Legislative power and opposition) Juan Guaidó. However, in parallel to the ban of the AstraZeneca vaccine, Maduro's government announced that it would import the Russian EpiVacCorona vaccine.

This is an important finding that represents the extensive disinformation activities carried out by the Venezuelan government. Even the National Armed Forces, through the Bolivarian National Guard, was involved in this ploy by intentionally promoting articles from VTV, the state television network, on Facebook and Twitter.

The eleventh flight from China to Venezuela arrived on March 1 at 11:00 p.m., carrying 500,000 doses of the Vero Cell vaccine produced by Sinopharm. The plane was also carrying an additional 17 tons of supplies to combat the COVID-19 pandemic.

The event was covered by the main news agencies, in particular by EFE and Europa Press - both among the first results on Google search from Venezuela. It was also covered by CNN en Español and RT Actualidad television channels, as well as the *Sputnik Mundo* website. However, it was not covered by the *Xinhua* Chinese news agency website. The latest article published about Chinese flights to Venezuela was on February 24, when the 10th flight landed. Instead, what was found is an article on how China is supporting Latin America in its fight against COVID-19, reinforcing the narrative that China is a global leader in international aid. The newspaper *Últimas Noticias* did not spare praise with the headline "Chinese vaccines take over much of the world." The following media outlets covering the delivery of Sinopharm vaccines were reviewed:

Table 10: Media outlets that cover the delivery of Sinopharm vaccines to Venezuela

Outlet	Headline
VTV	Supplies and first shipment of 500 thousand vaccines against COVID-19 developed by China arrives
Telesur	Venezuela receives 500,000 doses of Chinese anti covid vaccine
CNN	Venezuela receives 500,000 doses of Chinese Sinopharm vaccine
EFE	Venezuela receives half a million doses of vaccines against COVID-19 from China
Europa Press	Venezuela receives half a million doses of Chinese vaccine against COVID-19
Finanzas Digital	Venezuela begins vaccination of teachers with Chinese Sinopharm vaccines
Últimas Noticias	Chinese vaccines take over much of the world
Actualidad RT	Venezuela receives the first 500,000 doses of the Sinopharm vaccine against COVID-19 [*sic*]
Sputnik	First shipment of Chinese vaccine Vero Cell arrives to Venezuela

The data was sourced by using the Crowdtangle extension (plugin) for Chrome on two different days: March 3 and 15. Shared data from all of the accounts on Facebook was downloaded, as well as the data from the Telesur and VTV accounts on Twitter.

The most interesting finding is in the data downloaded from the VTV article shared via Twitter. It shows that the article was shared by 59 Venezuelan military accounts linked to the Bolivarian National Guard (GNB). Many of the accounts also used face mask face (😷) and thumbs up (👍) emojis, suggesting that they were created according to instructions of some kind. Most of these accounts appear to be institutional, and there are also various accounts of commanders and lieutenants.

Table 11: Examples of military accounts

User	Followers	Interactions
Antidrogas GNB	3.090	22
GNB Sucre 😷👍	10.641	21
GNB D- 811 Faja Petrolífera 😷👍	1.600	20
👍😷DESUR-VIGIA👍😷	114	20
@1RACIA-DESUR👍😷	581	19
GNB_ANZOALAB52	3.044	18
Gnb2daciaDesurLara	229	16
D.V.C N° 41 GNB😷👍	1.885	15
@1RACIA-DESUR👍😷	581	15
👍😷DESUR-VIGIA👍😷	114	15
GNB PUEBLO FALCON 😷👍	5.793	15

The VTV article was also the most shared on Facebook. Two military accounts also stand out: Milicia Bolivariana and FuerzasMilitares.org, although the latter is an independent Colombian magazine that covers security and defense issues.

Table 12: Facebook sites that shared the VTV article

Facebook sites (page or group)	Followers	Interactions
VTVCanal8	601.687	1490
Followers of Ernesto Che Guevara	19.101	19
fuerzasmilitares.org	164.609	8
Chavez y Bolívar revolutionaries	636	6
BOLIVIARAN MILITIA	6.414	6
RT (International news in Spanish) [unofficial group])	12.675	0
Trujillo Socialist Municipality	1.186	0
RETIRED AND PENSIONED OF VENEZUELA	106.994	0
Maracaibo Raya Maicao Travel	105.493	0

This analysis exposes the diversity of actors participating in disinformation campaigns and demonstrates commitment to the government, the government media and even the national Armed Forces. It is evident that because of hegemonic communication, these campaigns have an important effect on the population. Display of government power on

social media is evident, as it was from 2015-2017 when the government managed to dominate discussion on Twitter.

The GNB is the largest arm of the National Armed Forces after the Bolivarian Militia and the Army. This military body, with all its ubiquity, has Twitter accounts which are used to promote not only its activities but also those of the government: not only institutional accounts but also those of active military personnel. These activities are outside the country's regulatory framework. For example, Article 330 of the 1999 Constitution of the Bolivarian Republic of Venezuela prohibits the National Armed Forces from participating in propaganda, militancy, or political proselytizing.

In contrast to the first research findings regarding the GNB's promotion of the Chinese vaccine on interactive media, data from 40 accounts identified at the beginning was downloaded. The GNB accounts identified were:

Table 13: Bolivarian National Guard accounts that promote the Chinese vaccine

Twitter Account	Followers	Following
GNB Guardia del Pueblo	97.507	1.012
GNB Capital	37.469	1.203
GNB Anzoátegui	29.743	1.137
GNB Bolívar	25.776	894
Mayor GNB Rivero	16.948	18.562

When the following accounts were filtered in relation to the followers of the 40 accounts selected, it turns out that there does not seem to be a follow-for-follow strategy, since not all accounts follow each other. However, the number of accounts that are followed is certainly remarkable. The total number of unique follower accounts is 692 (out of a total of 3,482 followers downloaded from all accounts), which is a particularity that began when Hugo Chavez created his account @chaveucedanga in 2010.

WHAT DOES THE VACCINE SENTIMENT ANALYSIS SAY?

The purpose of this section is to detect if there is a bias in sentiment analysis using a tool developed for this project by the Tecnológico de Monterrey. This tool allows you to analyze and visualize the emotion behind a text (positive, negative, or neutral) and determine the possible underlying intention.

3,200 tweets from the Telesur International account and 3,200 tweets from the Telesur Venezuela account were downloaded. Although the two accounts belong to the same medium, the tweets are not all identical. For the purpose of this research, we selected tweets specifically discussing the vaccines, of which only 254 resulted in triunes, 131 from Telesur Venezuela and 123 from Telesur International. Repeated tweets were included in the sentiment analysis as they are considered part of a strategy to understand the general perception of sentiment based on identical messages.

The following questions were considered in the sentiment analysis of Telesur's Twitter account: Is it possible to identify a bias of emotion in tweets of a channel considered to be informative? Additionally, does an existing bias make it possible to identify fake news? It is generally understood that fake or falsified news uses the media's informational structure or sensationalist clickbait content. Journalism can be sensational, even if it is not false.

VADER and the NRC Emolex lexicon tools were applied, in addition to the TextBlob application programming interface (API).

When the analysis was conducted with the VADER lexicon, which produces results labeled as positive, negative and neutral, it is evident that the messages are mainly neutral. The neutral column gave a 1 rating to 87 out of 254 values, which means that on a scale of 0 to 1, they are completely neutral. However, the median total value is 0.924. The tools did not identify evidence of language that might reflect a positive or negative trend in the group of tweets about the vaccine.

The NRC Emolex lexicon analysis was conducted with a scale of +1 to -1; the results table displays only polarity.Consistent with the results of the analysis described above, most values average at 0 and therefore point to the tweets being neutral.

What happens when the evaluation is not based on positive, negative and neutral, but rather on words linked to groups of emotions? The sentiment analysis tool identifies that the value that dominates that emotion is equal to zero. For example: there are 195 tweets that represent anger, and their value is zero; but the maximum value of this set of tweets is one of 0.153. When it comes to happiness, there is a similar trend. 182 tweets have a value of zero, and the maximum value of one tweet is 0.25. Nonetheless, trust is the emotion with the highest value, specifically a tweet from the Russian ambassador to Venezuela who trusts the EpiVacCorona vaccine and was the first to be vaccinated.

The following image is a word cloud that visualizes ideological trends among the tweets. The most important words include: vaccines, Sputnik, Soberana, Abdala and Cuba (Soberana and Abdala being the Cuban vaccine candidates that the Venezuelan government has been promoting over the last few months).

Case Studies

There were events associated with the political crisis during which the Venezuelan government played a role in disinformation activities. Government media allies such as Últimas Noticias, Telesur, La Iguana TV, Correo del Orinoco, VTV, Diario Vea, Ciudad Caracas, Venezuelan News Agency, Globovisión, and TVES were analyzed. The last cases studied were related to the disinformation about Venezuelan oil shipments, the Republicos (an alternative right-wing group), as well as the case of the Integral Diagnóstic Centers (CDI) as part of a parallel health system implemented 18 years ago by then-president Hugo Chávez. The accounts linked to this initiative also spread disinformation through socialist slogans, highlighting above all the alleged Cuban solidarity with Venezuela.

The case of the oil shipments from Venezuela to China is a very clear example of the obscurity of the Venezuelan government and the lack of response by the media on vital issues. This creates a dangerous misinformation puzzle, which limits citizens' right to information. This case refers to the information disseminated by Reuters and Bloomberg about the shipment of Venezuelan oil with mediation from China.

A review of publications between November 30 and December 6, 2020, was conducted. These publications pertain to eight media outlets, including the *Xinhua* news agency. It is noticeable that China's aid is not mentioned in the government media, which shows that

the promotion of this support is not part of the alliance's propaganda technique. The media outlets examined are outlined in the table below.

Table 14: Media outlets examined for coverage of oil shipments from Venezuela with Chinese mediation

MEDIA OUTLET	WEBSITE
AGENCIA XINHUA	spanish.xinhuanet.com
TELESUR	telesur.net
VTV	vtv.gob.ve
ÚLTIMAS NOTICIAS	ultimasnoticias.com.ve
EL ESTÍMULO	elestimulo.com
EL UNIVERSAL	eluniversal.com
EL NACIONAL	elnacional.com
EFECTO COCUYO	efectococuyo.com.ve

This reinforces the official narrative, which explains that the collapse of Petroleos de Venezuela (PDVSA) is a result of sanctions from the U.S. government. From that single statement, we can already corroborate elements of disinformation spread by the Venezuelan government in the form of propaganda. From this same perspective, they claim to be living and waging an asymmetric war to which the government of Xi Jinping joins Venezuela as an ally.

Another issue is the group called Los Republicos—a term that means "outstanding citizens well versed in State affairs and political issues"—who define themselves as a political movement and not as a party. They believe that the solution for Venezuela is a U.S. military intervention and consider a large part of the Venezuelan opposition to be a sham. They were among the last to acknowledge that Trump had lost an election, or rather that Biden would come to power. They see intervention by philanthropist George Soros in everything and are influential on social media.

Alberto Franceschi, a representative of the Venezuela Project Party (center-right) in the defunct Venezuelan congress (as the legislative branch was previously called), is one of the most prominent members of the alternative right movement. Franceschi drives content both on the movement's website and YouTube channel. On his personal video channel, he has 32,000 followers.

Humberto González is another visible leader of the Republicos, with 565,000 followers on Twitter. At the end of 2020, before the U.S. presidential elections, he had estimated 615,000 followers. He was considered to be a member of a network of Venezuelans who supported Donald Trump as president and candidate, and even joined Trump's communications campaign contesting the electoral fraud accusations against him. He is also a columnist for the weekly publication *La Razón*.

Franceschi and González are not the only ones; however, they are the most well-known Republicos. On the Republicos website there is a group of people who are constantly posting and commenting, including activists from other Latin American countries.

The Republicos have both personal and institutional accounts on WhatsApp, Telegram, YouTube, Twitter, Parler, and Gab (these latter two networks being infamous in the U.S. for embracing far-right figures and groups banned by other platforms). They have connections with news channels such as *Parte de Guerra* that have more than 36,000 subscribers and more than six million views since 2014.

In comparison, *Efecto Cocuyo*, an independent Venezuelan media outlet that has also been on YouTube since 2014, barely exceeds 5,000 subscribers and 900,000 video views. *The Freedom Post*, a related outlet that emerged this year, started with 100,000 visits according to the Similarweb internet analysis conducted in January of this year. Now visitor numbers are less than 50,000, which possibly may have been influenced by Google's algorithm change that occurred this year.

The last case studied was that of CDI, which is part of the parallel health system created by *chavismo*, despite the formal and functional existence of a public health system since the first third of the 20th century.

It is important to clarify that the so-called "missions" are social welfare programs created by the government of Hugo Chávez as of 2003 to address social exclusion, but also as a form of social control of the population in poverty. The Barrio Adentro mission is a strategy to bring health professionals to poor neighborhoods in cities to provide health care with the help of Cuban healthcare workers. This program was created even though there was already an extensive network of outpatient clinics and primary health care centers, as well as qualified local healthcare personnel.

Venezuela not only bought Cuba's services to build up the Barrio Adentro mission, but also began to control interactive media associated with this social welfare program. Venezuela bought services from Cuba that it did not even produce in order to create and operate the Barrio Adentro network. In addition, the government runs a propaganda network to convince Venezuelans of its solidarity.

The investigation set out to identify the true scope of the Twitter accounts linked to the CDI and the Cuban Medical Mission. User statistics of 14 CDI accounts throughout Venezuela were downloaded. They are accounts that promote the hashtag #BarrioAdentro18Aniversario and range from having dozens to a few hundred followers. These accounts are listed below.

Table 15: Users, their number of followers, accounts following and CDI followers

Users	Followers	Following	CDI Followers
@cdipuertadelli1_	121	25	46
@CDI_arenas	364	262	46
@CdiMichelena	22	79	16
@CdiLibertador	531	387	21
@cdihiguerote3	n.a.	n.a.	58
@CdiGilberto	271	156	19
@CDIelRosario	67	77	16
@cdicorpo11	232	181	50
@cdicarvajal	73	27	3
@CdiBocono	10	4	8
@CDI_Tariba	32	2	2
@cdi_suiza_	99	99	42
@CDI_feyalegria	914	1.751	53
@CdiLagunas	189	201	47
@cdi_sucre	53	226	9

Among all these accounts there are 1,431 unique accounts that include individuals, public health centers and Cuba Coopera accounts, which is what users of Cuba's international medical cooperation program—or the Cuban Medical Mission—are called. Cuba Coopera has Twitter accounts by state and mission.

After examining the 14 aforementioned accounts, we found that there are up to 114 unique CDI accounts within the Barrio Adentro mission. In 2009, there were 499 CDIs in Venezuela, according to sources from Barrio Adentro.

Undoubtedly, the number of accounts that indicate Cuba as their location is also curious, because on Twitter the location may mean that the user is originally from or currently located in the country mentioned in the post timestamp. Keeping this in mind, more than 370 of the 956 accounts affirm that they are located in Cuba. This means a third of the total followers are not Venezuelans.

In general, Barrio Adentro accounts are full of socialist slogans, Fidel Castro, white coats (alluding to the Barrio Adentro doctors), and insistence of Cuba's supposed solidarity with Venezuela. In addition, the Cuban flag appears in the profile photos of these accounts, so it is evident that they carry out propaganda in favor of Barrio Adentro.

Special Case Study: Protests in Colombia

In 2019, Colombia was shaken by violent protests that resurfaced in 2021 as a result of an extemporaneous proposal for tax reform proposed by the government of President Duque,

which was immediately withdrawn. However, the fuse was already lit and soon it spread into social protests that condemned the deep inequalities that persist.

In the context of this unrest, numerous accounts of police abuses and excessive use of force were reported, as was disinformation. For this case study, hashtags related to the protests in Colombia were examined. Key hashtags dated between May 29 and June 7 were identified based on the Trendinalia index. Hoaxy was also used to download data to identify hashtag connections. The Vicinitas app was used to download tweets from a specific hashtag. Hoaxy generally identifies just over 1,000 relationships to hashtags per search, and about 2,000 tweets were downloaded through Vicintas. All Hoaxy downloads are from the search #ParoNacional + date (day + initial letter of the month), therefore hashtags ranged from #ParoNacional29M to #ParoNacional7J.

For this case, it was decided that no official government accounts would be used in this analysis. A cross data analysis was conducted using tweets with a specific hashtag and filter by Venezuela (on Twitter the location is defined, not geolocated, unless the account user activates this function).

176 accounts were linked to the following four hashtag trends: #ColombiaResiste, #CaliResiste, #DuqueAssino and #SOSColombiaNosEstanMatando.

While the focus of the analysis was on accounts that identified their location as Venezuela, a specific account stood out. This account had 69 tweets, retweets or cited tweets and belongs to a Venezuelan that was tweeting from New York and interacts with *chavismo* intellectuals such as Roberto Hernández Montoya. This user known as Prometeo @AntonioM646, publishes many photos and sarcastic comments and is one of the accounts identified as most influential in the context of this case study.

We define cyborg accounts as those that share similar traits to bots but are managed by humans acting in an orchestrated way to fuel messaging campaigns. They can also be automated to some extent, for example, when retweeting posts from certain accounts. Most of the accounts found appear to be cyborg accounts, with people running them behind the scenes.

In summary, whether expressly organized or not, it is evident that there are *chavismo* attempts to influence politics of other countries; in this case, that of Colombia. It is important to note that Colombia and Venezuela are sister countries with strong cultural, historical, and economic ties. Colombia has always been an important player in Venezuelan domestic and foreign policy.

For the U.S., Colombia is the most important and reliable ally in the region. In the context of the Venezuelan crisis, Colombia has received the largest number of Venezuelans migrants and has deployed a broad diplomatic strategy aiming to find opportunities for negotiation to end the crisis. A period of political instability or an eventual replacement of the Duque government before the end of term would weaken Colombia's firm stance against the Maduro government and its international leadership. Furthermore, if greater powers in the region such as Mexico and Argentina, which are currently ruled by the left, continue to avoid questioning the Venezuelan regime, regional pressure for political change in Venezuela will decrease notably.

Social networks are playing a greater role in the expression of social unrest, as seen during the Arab Spring more than ten years ago. In Latin America, social movements are organized through social networks, which is why they become fertile ground for disinformation and the promotion of anti-systemic movements.

Until a few years ago, Russia had no major relevance in the region beyond the sale of weapons to various countries. However, it has recently expanded its influence through deploying disinformation campaigns without investing much human, financial, or technological resources, and is having an important impact in public opinion and consequently outlooks on the political future of the region.

GEOPOLITICAL ANALYSIS

President Maduro's government began in 2013 after a controversial victory by a 1.49 percent margin over opposition candidate Henrique Capriles. During this time, the government's authoritarian tendency grew stronger. Maduro, unlike Chavez, has never had overwhelming popular support, so his administration compensated for its lack of democratic legitimacy with the use of force.

For Jacome (2016), the government's turning point towards a more open authoritarianism was the triumph of the Democratic Unity Roundtable (MUD) party's pro-democratic campaign in the 2015 legislative elections. This resulted in greater deterioration of institutions as well as greater control of the Executive branch in order to limit the functions and capacity of the new legislative power of the opposition party. Jacome argues that this control was strengthened with increased militarization and the postponement of national elections.

This authoritarianism made the Venezuelan crisis more visible to the world and shined a spotlight on the potential consequences of a mass exodus of Venezuelans in the region.

Intervention by the international community began in 2002-2003 when the opposition began an insurrection to displace former President Chavez. The Organization of American States (OAS) participated in a Forum for Negotiation and Agreement. Unfortunately, the international community did not monitor the country's compliance with the agreements and all efforts were in vain. The 2004 referendum recall was too late, and the country became even more polarized.

Today, the geopolitical environment is much more complex. The change in Venezuelan foreign policy towards a multipolar landscape allowed for it to strengthen relations with Russia and China to the detriment of its previous relationship with the U.S. that existed during the democratic period in Venezuela (1958-1998).

Bravo (2011) explains that the country's foreign policy has evolved since 2002 to challenge the U.S. through its oil diplomacy, projecting international influence in support of a multipolar international system. At the same time, and practically from the beginning of his government, President Chavez sought rapprochement with Putin's Russia under this rhetoric of multipolarity. As a result, Russia has become one of Venezuela's closest allies

in military, economic, commercial, and even scientific domains. This broad cooperation has allowed Russia to consolidate its presence in the region beyond the sale of arms to various countries.

Likewise, oil diplomacy allowed the then nascent *chavismo* to weave a support network with the leftist governments of the region—starting with Cuba, but also with Argentina, Brazil, Bolivia, Ecuador, and Nicaragua. *Chavismo* aimed to create the Bolivarian Alliance for the Peoples of Our America (ALBA) as an alternative to what Chavez called neoliberal integration in the region.

This and all the multilateral initiatives led by *chavismo*, such as the Community of Latin American and Caribbean States (CELAC) and the Union of South American Nations (UNASUR) broke down as soon as the price of oil, its main resource that sustained political allegiances, fell. Similarly, various leftist governments entering the second decade of the century gave way to liberal governments that detached from these organizations created by Chavez because they lacked institutionalization and purpose beyond promoting Chavez's discourse and the oil industry.

In this context, the anti-U.S. narrative of the Venezuelan government has been incessant over the last 22 years: accusations of assassinations, coup plots, attacks, and military invasions of all kinds, all without evidence. Most recently, the Venezuelan government has blamed the U.S. for its difficulties in dealing with the COVID-19 pandemic.

The four years of the Trump administration and his rhetorical threats of military invasion reinforced the narrative of the Venezuelan government and contributed to the polarization of the international community, thus hindering consensus among the various Latin American and European governments interested in finding a peaceful path to conflict resolution.

Currently, President Biden has emphasized that the greatest challenges for U.S. foreign policy are related to Russia and China, stating clearly that the U.S. will engage in the defense of democratic values and human rights across the world. After four years of the U.S. closing itself off to foreign policy and abandoning important spaces in global politics, dealing with Russia and China will not be easy. In his first speeches as president, Biden made it known that the good feelings with Russia are over and that China represents a threat to the U.S., thus taking a more confrontational stance towards both powers.

Putin's Russia is a declining power that lacks the stature of the former USSR and cannot compete with the U.S. China is something else. Its economic growth has been exponential in the last two decades, developing an almost perfect authoritarian system that leaves no room for dissent, and that seems to have been strengthened by the COVID-19 pandemic. On the other hand, its discreet diplomacy, respectful of principles of non-intervention, promotes its political model under the conviction of its superiority over the West. This is the preferred narrative of the highest spokespersons of the Venezuelan government: Nicolas Maduro, Vice President Delcy Rodriguez, and Foreign Minister Jorge Arreaza.

The Sinopharm and Sputnik vaccines have been decisive in the disinformation strategy aimed at portraying the U.S. government as the main adversary of the Venezuelan people, and Russia and China as great benefactors. The truth is that if a negotiation process fails

again, authoritarianism in Venezuela will advance even further and will have consequences not only for the country, but for the democratic governance of other countries in the region.

CONCLUSIONS

▪ The research reflects that government websites and the public media system in Venezuela do not have consolidated and reliable information on any of the topics covered, even in regard to COVID-19, the acquisition of vaccines, or vaccination plans.

▪ The destruction of the traditional media fabric in Venezuela puts the population in a vulnerable situation when it comes to access to information. As authoritarianism deepens, Venezuelans have serious barriers to accessing and comparing information, thus allowing government disinformation campaigns to have a greater impact on the population.

▪ In Venezuela the deterioration of public services, particularly electricity and internet, prevents in-country citizens' access to information.

▪ The results of this investigation show that the Venezuelan government is carrying out disinformation activities aimed at misleading, confusing, and promoting social polarization in the country around key issues such as COVID-19.

▪ These activities are linked to disinformation agendas of other authoritarian governments such as Russia and China, which highlight concern about poor countries' access to COVID-19 vaccines and are spreading disinformation in Venezuela to promote their political model as favorable, in opposition to that of the West (specifically the U.S.).

▪ As Milosevich-Juaristi (2017) points out, disinformation is a strategy constantly used by Russia, both domestically and abroad. In this case, it has sought out to discredit Western vaccines and cast doubt on their effectiveness in order to promote Sputnik. However, it has not been able to comply with the delivery of vaccines; Venezuela still has not received the shipment of the second doses of the vaccine.

▪ China has used Russia's relationship mechanisms with Venezuela to penetrate the region and carry out its own disinformation activities. In the specific case of the Sinopharm vaccine, it uses the same strategy as Russia to spread inaccurate information about all Western vaccines and influence public opinion in favor of its vaccine.

▪ The narrative of the Russian and Chinese media pictures both countries as allies and unconditional friends of Venezuela in the face of the "blockade,", sanctions and alleged acts of aggression imposed by the United States. In addition, Venezuelan authorities have adopted the narrative that China has efficiently managed the pandemic.

▪ Also, as part of this narrative, there is evident bias and favoritism towards Russia and its vaccine assistance to Venezuela in the wake of COVID-19.

▪ The disinformation generated by the government of Venezuela and its allies Russia and China has contributed to the dismantling of democracy in the country.

RECOMMENDATIONS

▪ The advancement of authoritarianism requires the strengthening of civil society through the creation of networks that include various social actors in order to generate collaborative strategies. In addition, international donors play a role in drawing attention to the issue and supporting the strengthening of civil society.

▪ Capacity building is not a competence exclusive to communicators and academics. It is essential that citizens understand the subject matter. One aspect to consider would be the creation of disinformation chairs at educational institutions, with the support of NGOs and in an international cooperation framework. In the context of Venezuela, NGOs would have more prominence, since higher education institutions are on the verge of closing down due to decrease in faculty and students, budget cuts and lack of professors' autonomy.

▪ The prominence of Russian and Chinese information must be faced by promoting more independent digital media outlets committed to freedom of expression and information.

▪ Breaking the information bubble is a must. A negotiation process on the mere holding of free elections is not enough to promote democracy in Venezuela. It also requires the reconstruction of the social fabric, in which NGOs play a central role in boosting government transparency, depolarizing society, and promoting values such as tolerance.

▪ Latin America is currently facing a difficult moment. Democracy is at stake. Countries such as Mexico, Argentina, Peru, and Brazil are experiencing the debilitation of institutions that were challenging to build. On the other hand, Venezuela, Nicaragua, and Cuba are increasingly authoritarian. In this complex context and with the aim of promoting multilateralism and the democratic agenda of President Biden, the U.S. must work not only with governments, but also with civil society to combat disinformation and strengthen the private media ecosystem.

The Appendix can be accessed at: https://theglobalamericans.org/disinformation-appendices/.

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