

#EsteVirusloParamosUnidos: Comunicación política de guerra en Twitter. Creación de comunidades homogéneas en la crisis de Covid-19

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Resumen. Se analiza la comunicación política en Twitter del Gobierno de España en el pico de la pandemia de Covid-19. La campaña en Twitter #EsteVirusloParamosUnidos fue monitorizada durante las fechas con los peores resultados en términos de fallecimientos (31 de marzo-4 de abril). La muestra incluye 398.523 tweets que se recogen en cuatro bases de datos. Mediante el análisis de redes sociales se identifican los principales actores y las interacciones entre los usuarios. Observamos una elevada coincidencia entre la tipología de portavoces de las ruedas de prensa institucionales y los principales actores del hashtag, dándose prioridad a la administración y a las fuerzas armadas españolas. Se observa también que los principales líderes de opinión se relacionaron con su esfera natural. Mediante el análisis computacional se concluye que en este hashtag se dio en un ambiente de guerra, que la palabra “gobierno” se mencionaba más que términos médicos, así como la presencia de términos militares.

Palabras clave: Análisis de redes sociales; Twitter; comunicación política; covid-19; coronavirus; #estevirusloparamosunidos; campaña institucional; pandemia

[en] #EsteVirusloParamosUnidos: War-like political communication on Twitter. Creating homogeneous communities in the Covid-19 crisis

Abstract. This article analyzes the political communication on Twitter of the Government of Spain at the height of the Covid-19 pandemic. The #EsteVirusloParamosUnidos campaign on Twitter is monitored during the dates, with the worst results in terms of fatalities (March 31st– April 4th, 2020). In total, the sample included 398,523 tweets in four data sets. Through Social Network Analysis, the main actors and the main interactions between users were identified. The research shows a high coincidence between the typology of the press conference spokespersons and the main actors on the analyzed hashtag, prioritizing the Spanish administration and the armed forces. There was also a high relationship of the main opinion leaders with their “natural spectrum.” We conclude that in this hashtag, there was a “war-like” atmosphere. Via the computer-based text analysis, we identify that the word ‘government’ was mentioned more than medical words, and some military-like terms were present.

Keywords: SNA; Twitter; political communication; Covid-19; coronavirus; #estevirusloparamosunidos; institutional campaign; pandemics; Spain

Summary. 1. Introduction. News and facts. Description of the situation 2. Press Conferences: Multiplicity of spokespersons 3. Literature review 4. Research Questions and Objectives 5. Method 6. Network Data Collection 7. Results 8. Discussion and Conclusions

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1. Introduction. News and facts. Description of the situation

The state of alarm in Spain began on March 14th, 2020, with the publication in the BOE (Boletín Oficial del Estado/State Official Newsletter) of Royal Decree 463/2020. At the time of writing this article, Pedro Sánchez’s executive had managed to extend the state of alarm for the fifth time until June 7th, 2020. In the period analyzed (March 31st-April 4th), deaths from coronavirus totaled 5,216 in just five days, with April 2nd being the worst day on record

with 950 deaths according to RTVE (2020) and based on the Spain’s Ministry of Health database. It has been one of the worst periods on record in Spain. According to the INE (Instituto Nacional de Estadística/ National Statistics Institute), there were 23,778 deaths caused by Covid during March 2020, with an additional 8,743 deaths with causes unidentified but suspected of being caused by Covid for the same period. There were a further 38,325 deaths caused by Covid in April 2020, again with 17,134 not identified but suspected of being caused by Covid for the same period (INE).

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Recent studies have shown the preeminence of traditional media (Casero-Ripollés, 2020), publicly owned (EBU, 2020) in media consumption as a result of the coronavirus pandemic. However, it is also highlighted that “the results suggest the existence of complementarity between traditional and digital media” (Casero-Ripollés, 2020: 11) in the hybrid communication model already described by Chadwick (2013), as has been shown by Masip et al. (2020). According to this research, digital media appears as the first option to be informed (38.9%), followed by TV news (33.9%) and social media (11.4%). Information in digital media has been considered so important that on April 18th, the European Commission adopted a recommendation on the use of digital media as an important instrument for containment measures (European Commission, 2020). Several studies have been focused on fake-news and disinformation in this pandemic (Andreu-Sánchez & Martín-Pasqual, 2020; Pérez et al. 2020; Salaverria et al., 2020).

2. Press Conferences: Multiplicity of spokespersons

From mere observation, we can state that the Spanish government’s strategy was to appear on TV daily from the time the state of alarm was decreed. Such a strategy could have been a simple matter of keeping the population informed. The president appeared eight times, from March 12th until April 4th; the technical committee appeared 22 times (March 16-30th); while several ministers appeared during the same period, some 26 press conferences from March 15th until April 5th. In fact, all ministers have appeared in press conferences, except Irene Montero, due to her being quarantined. Costa-Sánchez and López-García (2020) highlight that there have been several problems in the government’s political communication. They focus on a lack of transparency, and they also criticize the spokesperson formula adopted by the government, as it is contrary to the crisis communication recommendations. A multiplied spokesperson can be positive (as they take the initiative and are proactive in the messages), but “it multiplies the risk of contradiction of the message and covers the entire media space, saturates it, opening for the public a scenario of attention and permanent tension.” In sum, according to these authors, the institutional actors “face the challenge of transparency, coherence, understanding with different stakeholders, leadership and disclosure (Costa-Sánchez & López-García, 2020: 10-11).

A week after Santiago’s cessation because of his controversial statement that the Civil Guard was working to reduce criticism against the government (the Interior Minister, Fernando Grande Marlaska, quickly stated that they were not acting against freedom of expression), the Spanish government decided to replace the press conferences that had taken place with several spokespersons, some of them military. They came out every morning to report on the evolution of the health crisis (*El Confidencial*, 2020b).

The press conferences of the Technical Management Committee had five spokespersons. Some of them had to be replaced because of the disease, such as González and Ceña. A Ministry of Health representative, usually the director of the Center for Coordination of Health Alerts and Emergencies, Fernando Simón; an armed forces representative (Chief of the Defense General Staff, Miguel Villarroya, or Chief of Staff, Carlos Pérez), one of the Civil Guard (the deputy operational director, Laurentino Ceña and General José Manuel Santiago); a representative from the National Police (the deputy operational director of the National Police, José Ángel González and the commissioner, José García Molina, amongst others; and a transport spokeswoman (the ministry’s secretary-general, María José Rallo).

The communication strategy of the Spanish government in this crisis has been widely seen as a failure. Principally, this is due to the multiplicity of stakeholders, which can lead to misunderstandings and lack of coordination (Camacho, 2020; Costa-López, 2020; López-García, 2020), but also an excess of appearances by the president, Pedro Sánchez, and the fact that most of the spokespersons are not communication professionals.

With the change of strategy, a high presence of the president is chosen, trying to reinforce his role as a leader (Camacho, 2020). According to López-García (2020), the use of military personnel as spokespersons could signal a strategic appeal to these stakeholders as they have a higher approval rating within the general public’.

According to the CIS, in 2015, the Spanish general public’s approval rating of the Civil Guard was (6,02), the National Police (5,95), and armed forces (5,51). This was doubled that of their assessment of the government (2,77), trade unions (2,61), and political parties (2,23) (CIS, 2015). López-García highlights that this assessment remains on a similar footing nowadays, so the “government sought to hide in the military, police and Civil Guard” (López-García, 2020: 14).

Some scholars (Castelo-Szulman, 2020; López-García, 2020) and media have criticized the usage of war metaphors (“against the coronavirus”) by the Spanish government spokespersons, particularly Pedro Sánchez. Susan Sontag already criticized war metaphors against cancer in 1978 (*Illness as a Metaphor*) and against AIDS in 1988 (*AIDS and its metaphors*). The armed forces in Spain were used in all kinds of tasks related to the Covid-19 crisis. So, the fight against coronavirus was not just a metaphor. As López-García (2020: 9) states, “The war-like language and the presence of uniforms on the news and in press conferences clearly showed intention from the government: this is a war.” Through this research, we will try to find out if this also happened in the analyzed hashtag.

The government uses the Spanish Army’s Military Emergency Unit to perform various functions related

to the virus in what is called “Operation Balmis,” in tribute to Francisco Javier de Balmis, the Spanish military doctor that brought the smallpox vaccine to America and the Philippines. López-García (2020: 7) emphasizes that media coverage of the UME (Spanish acronym for Military Emergencies Unit) was quite positive. In fact, one of the few counter-reactions was the opposition from the Catalan Government, which at first refused UME’s help to undertake actions that, according to them, could be perfectly realized by the Catalan administration (García, 2020).

3. Literature review

In political communication, Social Media have been widely considered as instruments that facilitate civilians to participate and become active political subjects and empowered citizens (Casero-Ripollés, 2017). The basis of this statement was clear: according to the utopian point of view at the beginnings of the research on the Internet (Meredith, 2013), the Internet and Social Media would facilitate citizen’s participation, and there were interesting problems to be studied, such as vulnerable populations (low education and non-frequency of digital network use) and their difficulty of equal access to these benefits (Casero-Ripollés, 2017). According to Campos-Dominguez (2017), the analysis of Twitter as a means of disseminating political messages is extraordinarily useful to get an overview of the discursive strategies of any political party.

There are multiple ways to study politics and social networks: how social networks are integrated into political campaigns (Householder & LaMarre, 2014), as well as the study by Kensi and Jomini (2006) on the relationship between Internet access, interest in political campaigns and national politics, and Twitter (Ausserhofer & Maireder, 2013); and also political participation on Twitter (Bode & Dalrymple, 2014). Research into Spanish elections and social media has been undertaken by Baviera (2018) and Guerrero-Solé (2018), amongst others. Guo et al. (2020) have recently analyzed the 2016 US elections and the effects of Twitter’s echo chamber. Ausserhofer and Maireder’s research concluded that the network formed by Austria’s most political Twitter users was dominated by a political professional elite but was open to outside participation. The topic analysis reveals the emergence of niche authorities and the periodic divergence of the political discourse on Twitter with that of mass media (Ausserhofer & Maireder, 2013: 291). Social Media as an implement used by political communication has been analyzed in the context of fragmentation and segmentation (Gibson, 2015: 184). In a broad sense, media space has evolved from a ‘one size fits all’ logic to a segmented appeal (Gibson, 2015: 184), or, in Negroponte’s words, from “prime-time” to my time (Negroponte, 1994).

Another interesting issue is activism. As Castells (2013) pointed out, in relation to politics, Social

Media is used to mobilize the bases, leading to different movements between politics, media, and the electorate. Social media are seen as a way to engage citizens and fight against political disaffection in contemporary democracies because those who are politically engaged on social media platforms tend to be more active (Jensen & Anstead, 2013: 162). Activism and new political parties have been widely studied (Gibson, 2015; Linares, 2013; Pérez-Altable, 2015; García-Carretero & Díaz-Noci, 2018; Casero-Ripollés, 2017; Valera-Ordaz & López-García, 2019). Social media in politics are being used to connect with young people (Utz, 2009), and to increase links with the electorate, in a broad sense (Ward & Gibson, 2008; Túnnez & Sixto-García, 2011), as well as to convey feelings (Coromina et al., 2018). According to some research, such as Kruikemeier’s (2014, 136), the use of Twitter in political campaigns is considered a positive input for political parties.

More recent investigations show that political communication on Twitter has developed an autoreferential character (García-Ortega & Zugasti, 2018), as well as a lack of factual interaction with the electorate. Cifuentes and Pino’s (2018) results also led to the conclusion that political parties’ use of Twitter was in relation to the creation of an “in-group” in Colombia’s Democratic Center, via fostering cohesion in the political party and with its electorate, meanwhile trying to attack their political rivals, placed in the “out-group” sphere.

A variety of research has been undertaken, and in several areas, that we must quote here because of their proximity to the topic. To start, the use of Twitter during the Covid-19 pandemic in Spain has also been analyzed from a mathematical perspective (Gutiérrez et al., 2021). The authors analyze the Twitter behavior of citizens and administrations during states of alarm.

The issue has also been analyzed with sentiment analysis techniques in several European countries (Kruspe et al., 2020) and via a topic modeling approach in order to explain which were the main topics discussed on Twitter during the pandemic (Agüero-Torales et al., 2021). Finally, the authors of this paper have also analyzed war-like language in the hashtag #estevirusloparamosunidos (Mustajoki et al., 2020).

Social networks do have a process of constant negotiation “to impose a certain story” (Coromina, 2017). It is good to bear in mind that in a crisis such as this, the administration may have not only this *need* to impose a particular story in the hashtag analyzed but also an additional narrative. Furthermore, social platforms have been studied as spaces where affinities and similar points of view between users led to filter bubbles (Pariser, 2011) or echo chambers where users are only exposed to agreeable opinions, without forgetting the importance of a platform’s algorithms to ensure the permanence of the users on the page (Baeza-Yates, Peiró, 2019). “As a result, we may see increasing social fragmentation and ideological po-

larization in our society” (Liao and Fu, 2014: 2745). The echo chamber effect has been studied by Colleoni et al., 2014; Freelon et al., 2015; Himbelboim et al., 2013; Guo et al., 2020; Liao and Fu, 2014; and Johansson, 2018, amongst others. Echo chambers in Twitter also have their detractors, as indicated in the title “Twitter Is Not the Echo Chamber We Think It Is” (Shore et al., 2018). But the more generalized perspective is that Twitter as a Social Media platform reproduces the effect, which tends to increase polarization, as “people tend to discuss issues only with other like-minded people” (Du, Gregory, 2017). There are several research scholars studying the echo chamber effect on Twitter, either in terms of racism (Criss et al., 2021), the Covid vaccination (Cossard et al., 2020), or the Greek Referendum and Europe as a public space (Michailidou, 2017), to name but a few.

Therefore, we consider that the echo chamber effect and polarization should be related to the usage of Twitter by politicians and political institutions, because according to several research studies, they usually employed Twitter for campaigning, for self-promotion and to spread information rather than to engage in conversations, even though Grant et al. (2010:579) showed that those who did interact with other users appeared ‘to gain more political benefit from the platform than others’ (Ausserhofer and Maireder, 2013: 292). In this sense, Guo, Rohde, and Wu’s (2020: 234) study concluded that “certain opinion leaders were responsible for creating homogeneous communities on Twitter.”

Towers et al. (2015) studied Twitter’s repercussion in the US’s Ebola health crisis; Vijaykumar et al. (2018) analyzed information about Zika in Twitter, also in the US, and they considered that the spread of information in Twitter had been positive: “As this study illustrates, journalists and news media organizations play a significant role in disseminating and amplifying Emerging Infectious Disease Outbreak (EIDO) information, with much of the Twitter content related to public health updates, actions, and advice” (Vijaykumar, 2018: 555). Some researchers highlight that Twitter does have a preeminence on information distribution related to health (Bakal & Kavuluru, 2017), but, along with some other problems observed in other social media, there is a dangerous mixture of information, easy and quick distribution, and the lack of verification (Albalawi et al., 2019; Perez et al., 2020: 4).

Political communication has been following several novelties related to the Internet and new social media and using them to improve communication with the general public (Túñez & Sixto, 2011; Campos-Dominguez, 2017). In fact, some authors claim the leadership of political class in the usage of new technologies (Guerrero-Solé and Mas-Manchón, 2017). According to López-García (2017), Twitter undoubtedly constitutes one of the social networks best adapted to the nature of political communication, which is the interrelation between three actors (politicians, media, and citizens) in the same space.

Nowadays, it is not at all rare that a public administration creates a hashtag on Twitter related to a campaign created and developed to sensitize the general public and raise awareness of the difficulties and recommendations to overcome the health crisis. The institutional campaign #EsteVirusLoParamosUnidos started with a press campaign: the most important legacy media in Spain (*El País, El Mundo, ABC, La Razón, La Vanguardia, El Periódico*, amongst others) appeared on March 15th, 2020, with the same cover and the hashtag of the campaign. Some legacy media from other countries in South America imitated the press campaign, such as Puerto Rico (*El Confidencial*, 2020a), Argentina, México, and Perú (Lubianco, 2020).

The campaign has been released by the Spanish Ministry of Health Sanitary Spanish Ministry and has been created by the Spanish advertising agency Kitchen. It was dealt with urgently, under Article 16, Royal Decree Law 7/2020 (March 12th). According to *El Confidencial Digital* (2020) and *Dircomfidencial* (27/3/2020), the cost of the media buying campaign was 4.5 million euros and was the most important campaign in Spain during March 2020. Amongst other institutional campaigns, it was also the subject of questions to the government by the opposition (PP/ Partido Popular) in relation to the awarding of institutional advertising campaigns. (EuropaPress, 2020). The campaign #estevirusloparamosunidos has a digital aspect, including a website (Ministerio de Sanidad, 2020), Facebook (Ministerio de Cultura y Deporte, 2020), Telegram, banners, a YouTube video, and the hashtag on Twitter, as well as a traditional one comprising media, cradle, and posters. As of May 22nd, 2020, Telegram and Twitter have the best results in terms of quantity of users engaging with the campaign.

Table 1. Number of views and likes of the official social network channels of campaign #EsteVirusLoParamosUnidos

Social Network	Visits/ Subscribers*	Likes
Facebook	14.000	268
Youtube video	1,516,021	2.5K
Telegram	3.414.000	Does not apply
Twitter	over 3.000.000 of tweets	Does not apply

*Spanish Ministry Official Telegram channel

4. Research Questions and Objectives

These are the research questions that we will try to answer in this paper by analyzing the hashtag #estevirusloparamosunidos during the aforementioned period.

RQ1: Who were the opinion leaders in the coverage of the pandemic?

RQ2: What is the typology of the main actors on Twitter?

RQ3: Who are the main Twitter users disseminating the information in the ego networks of the most important actors in this campaign on Twitter?

Using SNA techniques, the main objective of this research is to analyze and visualize which network is woven inside the hashtag #estevirusloparamosunidos circulating on Twitter around the Covid-19 pandemic.

The specific objectives are the following:

1. To identify the main actors. Find out which are the users that have relevance or authority
2. To study which are the main interactions in the network.
3. To observe whether there are any coincidences between the spokesperson(s) at press conferences and the spokesperson(s) at the space created on Twitter.

5. Method

This study examined the Twitter hashtag #estevirusloparamosunidos during the peak of the coronavirus pandemic in Spain. The analyzes were based on four data sets of publicly available tweets with the hashtag collected during the dates March 31st–April 4th, 2020. The total sample included 398,523 tweets in four data sets. Through Netlytic software and ORA software, we created a Social Network Analysis and computer-based text analysis of the tweets from March 31st–April 4th, 2020. This computer-based text analysis records the word frequencies during these dates in the campaign #estevirusloparamosunidos.

On Twitter, Netlytic is widely used to study hashtag campaigns, political activism, and political communication. Some of the latest examples include an analysis of feminist identity by Lommel et al. (2019) through research on the international hashtag campaign #DayWithoutAWoman; Romeiro et al. (2021) analyzing a protest campaign by the opposition in Brazil during Covid-19 with a hashtag #Somos70porcento; and Figueiredo (2021) studying #dia26euvo in Brasil which deconstructed the left-wing protest movement narrative. ORA is software included in Sage's handbook on Social Network Analysis (Scott & Carrington, 2014). It is commonly used by studies in political communication and social networking

sites (e.g., among the latest – Mercea et al.: 2020; Pavan: 2020).

6. Network Data collection

The data was collected from Twitter from March 21st, 2020 – April 20th, 2020. Twitter's followers' network is a directed graph where nonreciprocal relations are permitted (Morales et al., 2014). All publicly available tweets with the hashtag #estevirusloparamosunidos were collected. Overall, 1,232,759 tweets were collected over the period of 31 days. We took a sample of tweets for the week when the pandemic was peaking. As the worst day of the pandemic in Spain, in terms of deaths from Covid-19, was April 2nd, we chose the sample of tweets from the week of March 31st – April 4th. The sample included 398,523 tweets. They were analyzed via social network analysis first as name networks for each day of the peak. The name network analysis studies the messages' content and connecting nodes (in our case – Twitter users) between each other in case they reply, repost, or mention another user's tweet (Gruzd: 2009). A Twitter actor, or name, network shows us who interacts with whom in relation to a hashtag or search term (Graham and Ackland: 2017).

The resulting Name Networks were exported to ORA software in GraphML format, a network visualization application (Gruzd, Haythornthwaite: 2013).

We then created a dynamic network that showed how the main actors' posting behavior and importance for the network (centrality measures) had changed during this period. This dynamic network had 21,397 nodes, meaning that the total number of Twitter posters connected to each other in a network during this week was 21.397. As there were a great deal more tweets, it means that some actors had posted far more than once or twice. In fact, some of them had posted hundreds of tweets.

For the purpose of analysis, the four input meta-networks were divided into three periods: Beginning (March 31st), Middle (April 1st-2nd), End (April 3rd-4th).

Some nodes were excluded as they represented a part of another hashtag, for instance, SEGUIMOS LUCHANDO JUNT@S

7. Results

Table 2. Twitter accounts of the opinion leaders that appeared most frequently in multidimensional network built on the hashtag #estevirusloparamosunidos (March 31th – April 4th 2020)

#	Beginning	Value	#	Middle	Value	#	End	Value
1	sanidadgob	0,110	1	antobald98	0,065	1	sanidadgob	0,148
2	sanchezcastejon	0,106	2	sanidadgob	0,054	2	mercadona	0,054
3	mitmagob	0,088	3	sanduhadah	0,024	3	ejercitoaire	0,046
4	guardiacivil	0,047	4	tc_disisleri	0,024	4	salvadorilla	0,040
5	policia	0,044	5	tcsavunma	0,024	5	elprogramadear	0,037
6	ejercitotierra	0,035	6	tcbestepe	0,024	6	guardiacivil	0,034
7	ejercitoaire	0,034	7	mercadona	0,023	7	defensagob	0,028
8	umegob	0,030	8	camillebertrand	0,021	8	sanchezcastejon	0,027
9	sevillafc	0,024	9	brandspain	0,020	9	mitmagob	0,026
10	nato	0,022	10	dani78175141	0,018	10	feriademadrid	0,025
11	diba	0,022	11	jaarcossanchez	0,016	11	policia	0,024
12	laliga	0,021	12	mossos	0,16	12	valenciacf	0,023
13	proteccioncivil	0,020	13	barcelona_gub	0,16	13	24h_tve	0,023
14	maecgob	0,018	14	embespturquia	0,16	14	recelta	0,022
15	mjmonteroc	0,017	15	mevlutcavusoglu	0,16	15	aspas10	0,021
16	yosoy8a	0,016	16	eldiarios	0,16	16	populares	0,020

Source: Own elaboration

RQ1 asked who the opinion leaders were in the coverage of the pandemic.

Table 2 presents opinion leaders that appeared most frequently on Twitter in each period. To measure a Twitter user's influence in a network, we used in-degree centrality. The in-degree centrality defines how many network ties were pointed towards a user (Borgatti & Everett: 2018). Researchers previously defined opinion leaders as having an in-degree centrality of at least 10% (Valente and Pumpuang, 2007). This research uses the 2% threshold because of the large scale of the Twitter networks analyzed, and as suggested by previous Twitter research (Guo et al., 2018), this could ensure that the study detects a broad range of users. A total of 38 unique opinion leaders were identified. The analysis of in-degree centrality was carried out on the whole network over all the actors who had in-degree over 2%. So, some were added in periods 1 and 3, and some were deleted in period 2, for instance, because they didn't pass the threshold. All in all, there are those Twitter users – opinion leaders, who passed a 0.02 threshold according to the in-degree centrality.

To better understand the composition of the network based on the hashtag #estevirusloparamosunidos, we also visualized and analyzed the Twitter network in Netlytic, using three periods of collection. Because the networks are very large, and constitute around 100,000 tweets for each period, only the largest connected clusters (components) were displayed, while isolated nodes and small disconnected clusters were not taken into account (Gruzd & Tsyganova, 2014). Each of the five clusters of each period was thus visualized, and based on the visual examination, the main actors were identified. The visualization was done day by day.

They represent the most important nodes in a concrete visible cluster that Netlytic identified. As can be observed, the most repeated ones in Table 2, during the three periods, are sanidadgob; sanchezcastejon; mitmagob; guardiacivil; ejercitoaire, and mercadona. It can be noted in the following graphs (See also Table 3) that these were the main stakeholders during the peak of the pandemic.

Figure 1. March 31st. All clusters

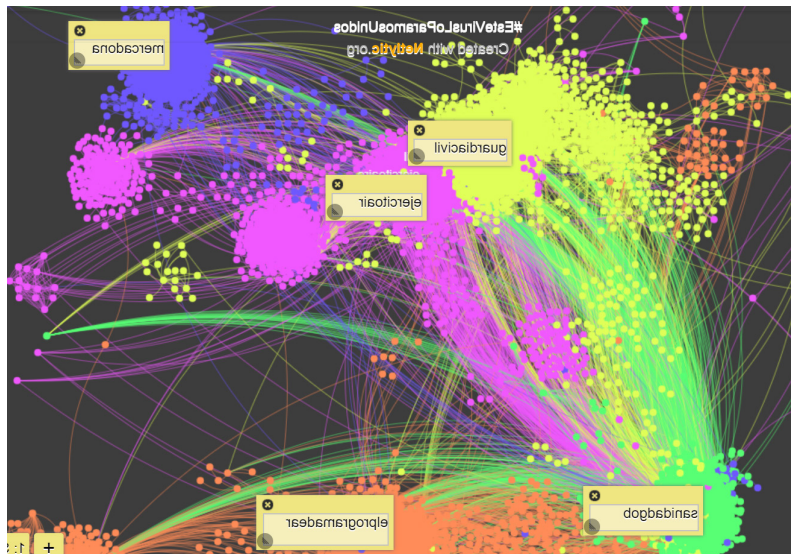


Figure 2. April 1st-2nd. All clusters

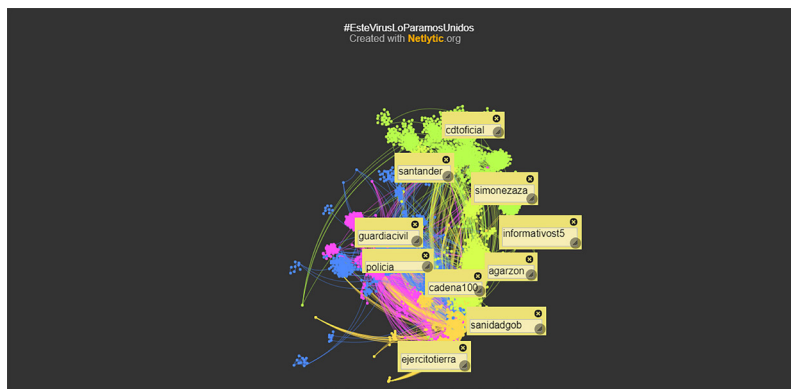
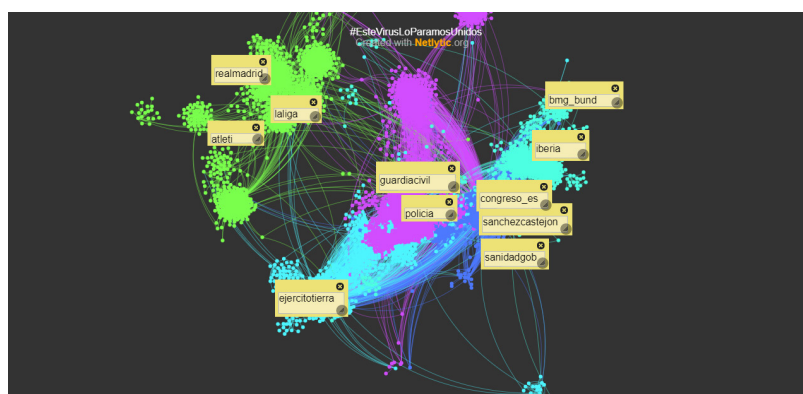


Figure 3. April 2nd-4th. All Clusters



RQ2 was about the typology of the main actors of the hashtag. We categorized the main actors (those with the highest in-degree centrality of the network over time). The following table presents the typolo-

gy. The main categorization is between politicians, administration and institutions, and other social actors, which we are not mentioning further, such as sportsmen, influencers, businesses, and the like.

Table 3. Politicians, administration and institutions' Twitter accounts that appeared most frequently on Twitter during the period of data collection of multidimensional network built on the hashtag #estevirusloparamosunidos (March 31th – April 4th 2020)

Spanish Government	Armed Forces	Spanish Administration	International Bodies	Other Governments	Political parties
Sanidadgob - Ministerio de Sanidad (Ministry of Health)					
	Guardia Civil	diba - Diputació de Barcelona (Barcelona Provincial Council)			
	nato - Official Twitter account of NATO - the North Atlantic Treaty Organization				
	tc_disisleri - Ministry of Foreign Affairs of Turkey				
tcsavunma Republic of Turkey Ministry of National Defence					
tcbestepe –administration of the President of Turkey					
	@populares – Partido Popular				
Mitmagob - Ministerio de Transportes, Movilidad y Agenda Urbana, Gobierno de España.					
Ministry of Transport, Mobility and Urban Development					
	Policia- Police				
sanchezcastejon Pedro Sánchez, Presidente del Gobierno de #España.					
President of the Spanish government, Pedro Sanches					
	Ejercitotierra – the Spanish army				
Salvador Illa Roca - Ministro de Ministerio de Sanidad					
Head of the Health Ministry of Spain					
	Ejercitoaire – the Spanish Air force				
	umegob - Unidad Militar de Emergencias				
Military Emergencies Unit					

Source: Own

RQ3 tried to answer which are the main Twitter users disseminating the information in the ego networks of the most important actors in this campaign on Twitter

As Everett and Bogatti (2005: 32) pointed out, “ego networks are drawn from the same basic network, and the objective is to give a network measure of importance to enable us to compare the centralities of the egos in our sample.” For the purpose of this research, we take the definition of ego networks by Bogatti et al. (2005). Perhaps a more simplistic phrasing: Ego-networks consist of a single actor (ego), the actors connected to it (alters), and all the links between them.

From the main actors of the Netlytic visibly identified clusters, five ego-networks of this particular campaign were analyzed, the prerequisite being that they were the central actor in a cluster at some point in time. As stated before, the main actors identified through visualization and in-degree centrality were: sanidadgob; sanchezcastejon; mitmagob; guardiacivil; ejercitoaire and mercadona. As there is a majority of institutional and political actors, we decided to focus on these and leave aside the commercial Twitter account (mercadona), which we have categorized as “other social actors.”

We can observe which was the ego-network and betweenness of these five main actors. Below are the graphs for the president of the government, Pedro

Sánchez; the rest can be found in the appendices. The information that we can visualize in these graphs has

also enabled us to identify the main actors inside each ego-network.

Graph 1. Ego-network of the president of the Spanish government, Pedro Sánchez

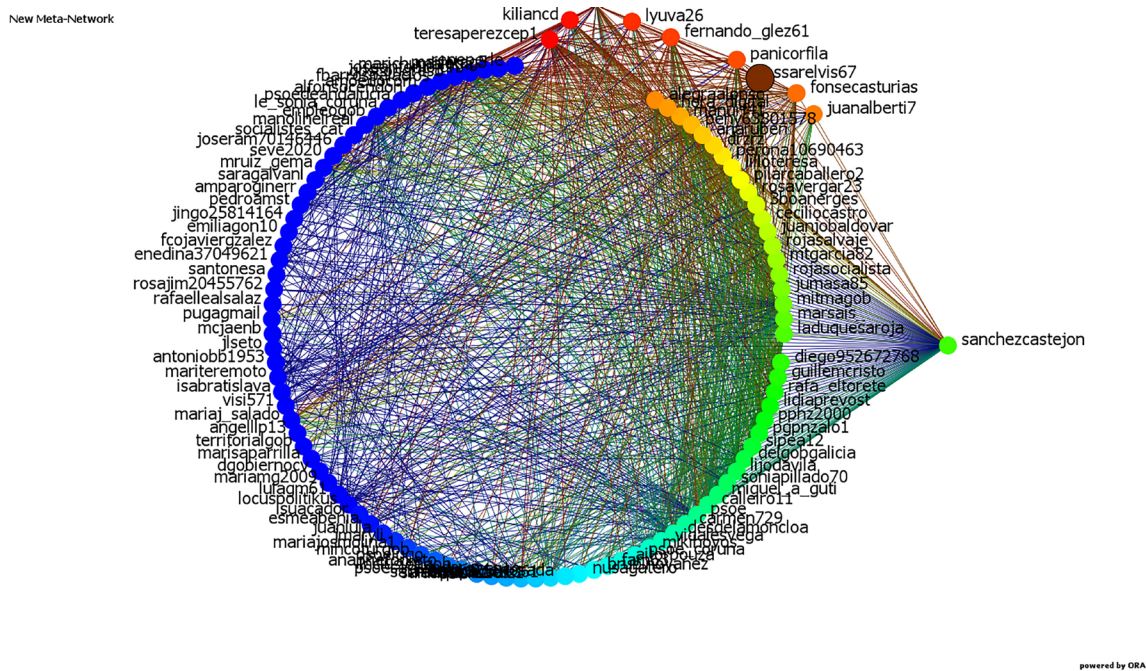


Table 4

Red	Highest
Orange	Intermediate
Yellow	Medium-level
Green	Low
Blue	Lowest

In particular, we paid specific attention to the betweenness centrality in these ego-networks. Betweenness studies the extent to which an actor is between all other actors within the network (Borgatti & Everett, 2005), and the more central it is, the more important for information dissemination the actor would be. Betweenness centrality identifies individuals or organizations that are potentially influential and are positioned to impose connections between groups and to bring to bear the influence of one group on another or serve as a gatekeeper between groups (Carey, 2014).

As with the in-degree centrality typology, we read through Twitter profiles and available tweets and identified the main ten actors with the highest betweenness centrality in these five ego-networks (excluding egos themselves).

In many cases, we have found that the users that constitute the most important actors in terms of betweenness centrality in our five ego-networks are the same individuals or institutions and mostly from the socialist political spectrum. For instance, Twitter accounts of the same Socialist Party supporters, as recorded in their Twitter accounts (@Teresaperezcep1;

@KilianCD; @Perona10690463; @937908Mcm; @AlegraAlonso; @nusagatero) are present not only in one ego-network but several. Moreover, Socialist Party members or supporters are present in every ego-network's top betweenness centrality actors.

Betweenness centrality in ego-networks of the main actors of the multidimensional network built on the hashtag #EsteVirusloParamosUnidos (March 31st – April 4th)[1]

[DD2] [DD3] As it is visible from the table and the node clouds, the majority of actors important for the dissemination of information in the ego-networks of most important speakers of the campaign, are politicians from the Socialist Party or government organizations.

Below are the node clouds of the ego-networks of Pedro Sánchez, as one of the most important actors in this campaign. The other most important actors' clouds can be checked in Appendices. They are colored according to betweenness centrality, with red being the highest. As it is visible from the node clouds, the previous conclusions about main actors supporting the opinion leaders are, in many cases, Twitter profiles of either members of the Socialist

#	Word in Spanish	English translation	Number of mentions
4	España	Spain	36.402
5	Gobierno	Government	33.407
6	Medidas	Measures	30.223
7	#quédateencasa	hashtag: “stay at home”	24.566
8	Sanitario	Sanitary	23.165
9	Casa	Home	20.360
10	Personas	Persons	19.470
11	Crisis	Crisis	12.987
12	Alarma	Alarm	12.560
13	#coronavirus	hashtag “coronavirus”	12.354
14	Material	Material	12.128
15	Lucha	Fight	11.631
16	@sanidadgob	Twitter account of the ministry of health	11.231
17	Esenciales	Essential	10.338
18	Trabajadores	Workers	9.718
19	Actividades	Activities	9.670
20	Compañeros	Fellows	8.034

8. Discussion and Conclusions

Besides having answered the research questions, there have been some topics that emerged thanks to this research. We can see there is a high level of coincidence between the typology of main actors in press conferences (which were broadcast by TVE and almost all generalist channels at that time) and in the hashtag analyzed, as the communication strategy from the Spanish government consisted clearly of prioritizing the armed forces (guardiacivil, ejercitoaire) in addition to the Spanish administration (sanidadgob, sanchezcastejon, mitmagob). We have to bear in mind that the analyzed hashtag belongs to a wider institutional campaign, #estevirusloparamosunidos, whose aim was to sensitize the citizens. As stated previously, the computer-based text analysis reinforces these results, along the lines that the emphasis was placed on administration and war-like language above the health and sanitary issues.

It is fairly clear that the main opinion leaders had a strong relationship with their “natural spectrum.” The results show us that, due to fragmentation and segmentation, this is not only a “segmented appeal” (Gibson, 2015: 184). We are not exactly talking about an “elite” of main opinion leaders, but a fairly closed group (niche) that particularly interacts with its natural common sphere, with few exceptions (Partido Popular in Table 1, position 16th, last period analyzed).

It is also an interesting finding that several of the spokespersons in press conferences do not appear as relevant actors of these networks inside the top posi-

tions— particularly not as personal Twitter accounts. Neither the majority of ministers (with the exception of the Ministry of Health, Salvador Illa, and mitmagob) nor the majority of military personell. Instead, there is a huge leadership of the aforementioned official accounts representing the same social and institutional stakeholders. So, this is a sphere that may be open to outside participation, but, in fact, it only attracts similar actors. This could be studied in further research analyzing its political homophily (Guo et al., 2020). It is also interesting to realize that Pedro Sánchez and Salvador Illa have more socialist individuals supporting them in the dissemination of information, whilst the military has fewer. We have observed that there is a high relationship between politicians and militaries in this hashtag, but each of them remains to have their own “circle.” It is also important to highlight that ejercitoaire, ejercitotierra, and guardiacivil did share “saludpublica,” as we can observe in the ego-network’s clouds.

In this sense, we point out that the behavior observed in the social networks analyzed coincides with social fragmentation (Liao and Fu, 2014) and homogeneous communities (Guo et al., 2020) and could lead to the so-called echo chambers and polarization. Therefore social networks, in this case, Twitter, would reach the opposite objective to that which the Internet was supposed to produce in its beginnings (Meredith, 2013) and, of course, the opposite objective that the government administration should pursue with its communication with citizens through institutional campaigns. The results of our research are fully in line with other research on polarization, as they reach

similar conclusions about homogeneous communities (Gutiérrez et al., 2021). On the other hand, topic-modeling research concludes that, during the lockdown, users focused on “the Spanish emergency, considered health and economic problems,” meanwhile at the pre-crisis stage, they focused on the international panorama (Agüero-Torales et al., 2021, 186). Although it is not possible to compare results, due to their methodological and sample differences, we must emphasize that these are messages and language intrinsically related to the domestic and national sphere.

We can also conclude that the network analyzed has an autoreferential character (García-Ortega & Zugasti, 2018), as the main opinion leaders keep interacting with citizens that are particularly politically aligned to the socialists; furthermore, because of the “behavior” of its main opinion leaders, as they interact especially with themselves and with related political actors. So, we have clearly studied an “in-group” (Cifuentes & Pino, 2018) that may have “out-groups” over there. This would certainly lend itself to further interesting research.

9. References

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