

8th REPORT | DECEMBER 2022
MEMORY CONFLICTS IN SOCIAL MEDIA. TWITTER DATA ANALYSIS

ONLINE MEMORIES

the hashtag as a place of memory

Author

CELESTE MUÑOZ MARTINEZ

Data collection

MARILUZ CONGOSTO

With the advice of

HISMEDI - UNIVERSITY CARLOS III

On the sociological profile and theoretical position

The project online memories is now ending its fourth and last year with the publication of the second part of the 2022 report, corresponding to the second semester. The first report, corresponding to the first semester and published on the EUROM website, includes all the updated sociological information (use of networks and profiles) from the previous year, theoretical considerations and methodological issues. The two reports for the period come together to make a single report and we refer to this first part for all these issues. Lastly, we expect to publish a final report or material summarising the project as a whole.

Commemorations included in this report

This report analyses three commemorations: (1) the European Day of Remembrance for Victims of Totalitarian Regimes (23 August), (2) the National Holiday of Spain (Día de la Hispanidad) (12 October) and the anniversary of the death of Francisco Franco (20 November).

Commemoration	2019	2020	2021	2022
European Day of Remembrance for Victims of Totalitarian Regimes (August 23)	X	X	X	X
Día de la Hispanidad (October 12)		X	X	X
Anniversary of the death of Francisco Franco (November 20)			X	X

Table 1. Summary of the regularity in the analysis of each commemoration

European Day Victims of Totalitarian Regimes 2022 (August 23)

General data

Collection method	Streaming API
Collection period	August 21 to 28, 2022
Words searched	<p>Víctimas regímenes totalitarios Víctimas del Estalinismo Nazismo Victims totalitarian regimes Victims of Stalinism and Nazism Victimes des régimes totalitaires Victimes du nazisme stalinisme Totalitäre Regime der Opfer Opfer des Nationalsozialismus Stalinismus Regimi totalitari delle vittime Vittime del nazismo Stalinismo Ofiary totalitarnych reżimów (Polish) тоталитарних режима (Serbian) Totalitárius rendszerek áldozatai (Hungarian) Žrtve totalitarnih režima (Bosnian) Žrtve totalitarnih režimov (Slovenian) Totalitné režimy obetí (Czech, Slovak) Ohvrid totalitaarsed režiimid (Estonian) Жертви тоталитарни режими (Bulgarian) Regimuri totalitare ale victimelor (Romanian) Upuri totalitārie režīmi (Latvian) Nukentėjo totalitariniai režimai (Lithuanian) #BlackRibbonDay #BlackRibbonDay2020 #BalticWay #pamietamy #MolotovRibbentroppact #PowstanieWarszawskie #RememberAugust23 Жертвы тоталитарных режимов (Russian) Жертвы сталинизма нацизма (Russian) Балтийский Путь (Russian) Пакт Молотова-Риббентропа (Russian) Víctimes règims totalitaris (Catalan) Víctimes nazisme estalinisme (Catalan)</p>

General data

Number of Tweets	1,150
Numer of Tweets + RTs	13,425

Development of the participation

The number of original tweets fell drastically between 2021 and 2022 and the percentage of RTs rose. Half the profiles from the previous year participated. As we will see later, some communities have disappeared while others have grown. The possible cause is Russia's invasion of Ukraine.

Year	Original tweets	Tweets + RTs	% RTs	One-time users
2019	4,527	23,054	80.36%	11,647
2020	3,993	33,188	87.96%	22,985
2021	4,717	31,369	84.96%	21,352
2022	1,150	13,425	91.43%	10,456

Table 1: Development of the participation

The following table shows the words selected for each year. The same words were used in 2022 as in 2021.

2019	2020	2021	2022
<p>Víctimas regímenes totalitarios Víctimas del Estalinismo Nazismo Victims totalitarian regimes Victims of Stalinism and Nazism Victimes des régimes totalitaires Victimes du nazisme stalinisme Totalitäre Regime der Opfer Opfer des Nationalsozialismus Stalinismus Regimi totalitari delle vittime Vittime del nazismo Stalinismo Ofiary totalitarnych reżimów (Polish) тоталитарних режима (Serbian) Totalitárius rendszerek áldozatai (Hungarian) Žrtve totalitarnih režima (Bosnian) Žrtve totalitarnih režimov (Slovenian) Totalitné režimy obetí (Czech, Slovak) Ohvrid totalitaarsed režiimid (Estonian) Жертви тоталитарни режими (Bulgarian) Regimuri totalitare ale victimelor (Romanian) Upuri totalitārie režīmi (Latvian) Nukentėjo totalitariniai režimai (Lithuanian) #BlackRibbonDay #80WW2 #BlackRibbonDay2019 #BalticWay30 #pamietamy #MolotovRibbentroppact #PowstanieWarszawskie #RememberAugust23</p>	<p>Víctimas regímenes totalitarios Víctimas del Estalinismo Nazismo Victims totalitarian regimes Victims of Stalinism and Nazism Victimes des régimes totalitaires Victimes du nazisme stalinisme Totalitäre Regime der Opfer Opfer des Nationalsozialismus Stalinismus Regimi totalitari delle vittime Vittime del nazismo Stalinismo Ofiary totalitarnych reżimów (Polish) тоталитарних режима (Serbian) Totalitárius rendszerek áldozatai (Hungarian) Žrtve totalitarnih režima (Bosnian) Žrtve totalitarnih režimov (Slovenian) Totalitné režimy obetí (Czech, Slovak) Ohvrid totalitaarsed režiimid (Estonian) Жертви тоталитарни режими (Bulgarian) Regimuri totalitare ale victimelor (Romanian) Upuri totalitārie režīmi (Latvian) Nukentėjo totalitariniai režimai (Lithuanian) #BlackRibbonDay #BlackRibbonDay2020 #BalticWay #pamietamy #MolotovRibbentroppact #PowstanieWarszawskie #RememberAugust23</p>	<p>Víctimas regímenes totalitarios Víctimas del Estalinismo Nazismo Victims totalitarian regimes Victims of Stalinism and Nazism Victimes des régimes totalitaires Victimes du nazisme stalinisme Totalitäre Regime der Opfer Opfer des Nationalsozialismus Stalinismus Regimi totalitari delle vittime Vittime del nazismo Stalinismo Ofiary totalitarnych reżimów (Polish) тоталитарних режима (Serbian) Totalitárius rendszerek áldozatai (Hungarian) Žrtve totalitarnih režima (Bosnian) Žrtve totalitarnih režimov (Slovenian) Totalitné režimy obetí (Czech, Slovak) Ohvrid totalitaarsed režiimid (Estonian) Жертви тоталитарни режими (Bulgarian) Regimuri totalitare ale victimelor (Romanian) Upuri totalitārie režīmi (Latvian) Nukentėjo totalitariniai režimai (Lithuanian) #BlackRibbonDay #BlackRibbonDay2020 #BalticWay #pamietamy #MolotovRibbentroppact #PowstanieWarszawskie #RememberAugust23 Жертвы тоталитарных режимов (Russian) Жертвы сталинизма нацизма (Russian) Балтийский Путь (Russian) Пакт Молотова-Риббентропа (Russian) Víctimes règims totalitaris (Catalan) Víctimes nazisme estalinisme (Catalan)</p>	<p>Víctimas regímenes totalitarios Víctimas del Estalinismo Nazismo Victims totalitarian regimes Victims of Stalinism and Nazism Victimes des régimes totalitaires Victimes du nazisme stalinisme Totalitäre Regime der Opfer Opfer des Nationalsozialismus Stalinismus Regimi totalitari delle vittime Vittime del nazismo Stalinismo Ofiary totalitarnych reżimów (Polish) тоталитарних режима (Serbian) Totalitárius rendszerek áldozatai (Hungarian) Žrtve totalitarnih režima (Bosnian) Žrtve totalitarnih režimov (Slovenian) Totalitné režimy obetí (Czech, Slovak) Ohvrid totalitaarsed režiimid (Estonian) Жертви тоталитарни режими (Bulgarian) Regimuri totalitare ale victimelor (Romanian) Upuri totalitārie režīmi (Latvian) Nukentėjo totalitariniai režimai (Lithuanian) #BlackRibbonDay #BlackRibbonDay2020 #BalticWay #pamietamy #MolotovRibbentroppact #PowstanieWarszawskie #RememberAugust23 Жертвы тоталитарных режимов (Russian) Жертвы сталинизма нацизма (Russian) Балтийский Путь (Russian) Пакт Молотова-Риббентропа (Russian) Víctimes règims totalitaris (Catalan) Víctimes nazisme estalinisme (Catalan)</p>

Table 2: Monitored words

Graph of RTs

The event was followed even less than in previous years. The number of original tweets fell to a quarter, although the spread increased considerably from 84.96% to 91.43%.

Each vertex corresponds to a Twitter profile that either posted a tweet or retweeted it. One vertex is connected to another when it has retweeted it. In most cases, RTs are a positive vote for a tweet. When we apply a modularity algorithm, the profiles with the most common retweets are grouped into communities and show us the structure of the network of connections. The shape of the graph corresponds to a force algorithm in which the most connected vertices attract and the least connected vertices repel.

All the profiles that do or do not belong to the giant component (larger subgraph whose vertices are all connected) have been analysed. Almost 20% of the profiles fell outside the giant component, which is why they have been included in the analysis (Fig. 1).

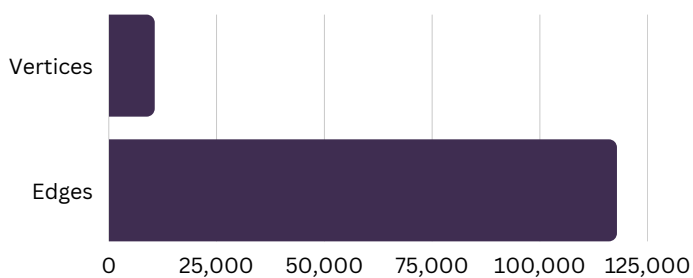


Fig. 1 Percentage of selected vertices in the graph

This year, some groups that stood out last year such as the Spanish neoliberals, the UK communists, the denialists of the victims of Stalinism and a group in opposition to the Canadian government had no presence. Instead, messages from the Baltic countries and Poland increased, possibly due to the impact of Russia's invasion of Ukraine.

The graph shows five loosely connected areas sometimes limited by language and other times by distance. The central area of the graph shows a block of communities, most of them English-speaking, that support celebration of the European Day of Remembrance for Victims of Totalitarian Regimes, with profiles from the EU, Lithuania, Poland, Slovenia and Estonia. At the bottom is a Russian-speaking community that also supports the celebration of 23 August. At the bottom right is a Greek community. On the left is a community from Canada, this year without opposition. Justin Trudeau always tweets at this celebration, but this year he used terms that were not among any of the monitored words so they could not be picked up. Through visual inspection of the tweet, he also received a backlash (600 retweets vs. 900 quotes). On the upper left is a group of Spanish communists with no connection to the rest of the groups, yet it was the fourth largest group (7.48% of the profiles).

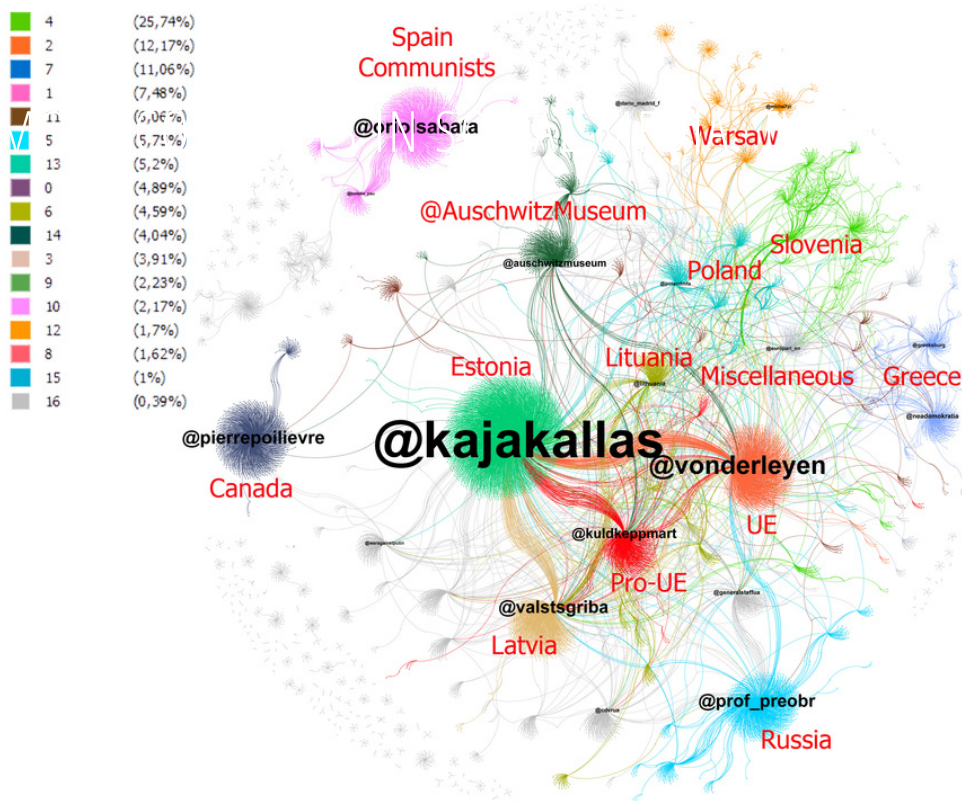


Fig. 2 Spread of tweets by community

Examples of the most popular content on the Internet during the commemoration



English dominated the language distribution (Fig. 3) and appeared in 62.7% of the profiles (53.77% in the previous year). It was used by Lithuanians, Slovenes, Poles, Canadians, and other EU profiles. The second most common language used was Spanish, at 13.97% (27.42% in 2021), employed by users from Spain. The third most common language was Russian, at 7.28% (1.11% in 2021), the fourth was Greek, at 4.53% (3.21% in 2021) and the fifth was Polish, at 4.49% (2.66% in 2021).

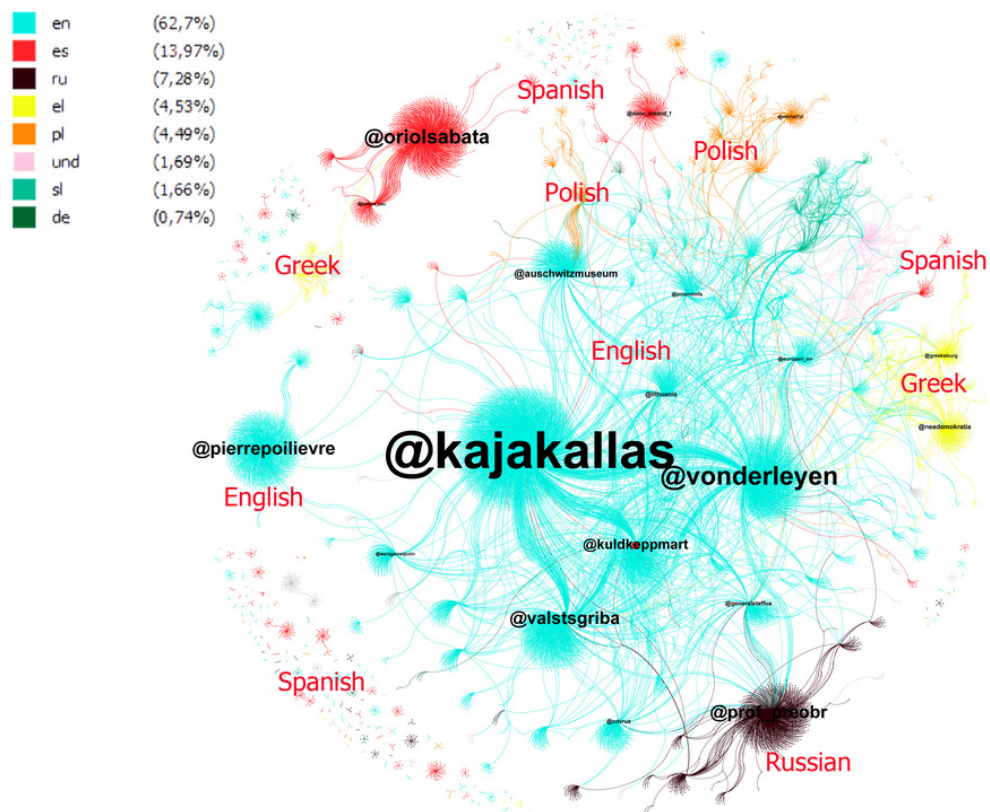


Fig. 3 Graph of RTs by language

Most of the tweets did not include a hashtag (Fig. 4). The most frequent hashtag was #BlackRibbonDay, which was found in 5.19% of the tweets (5.77% in 2021). The second most common was #BalticWay, which appeared in 1.66% (3.15% in 2021).

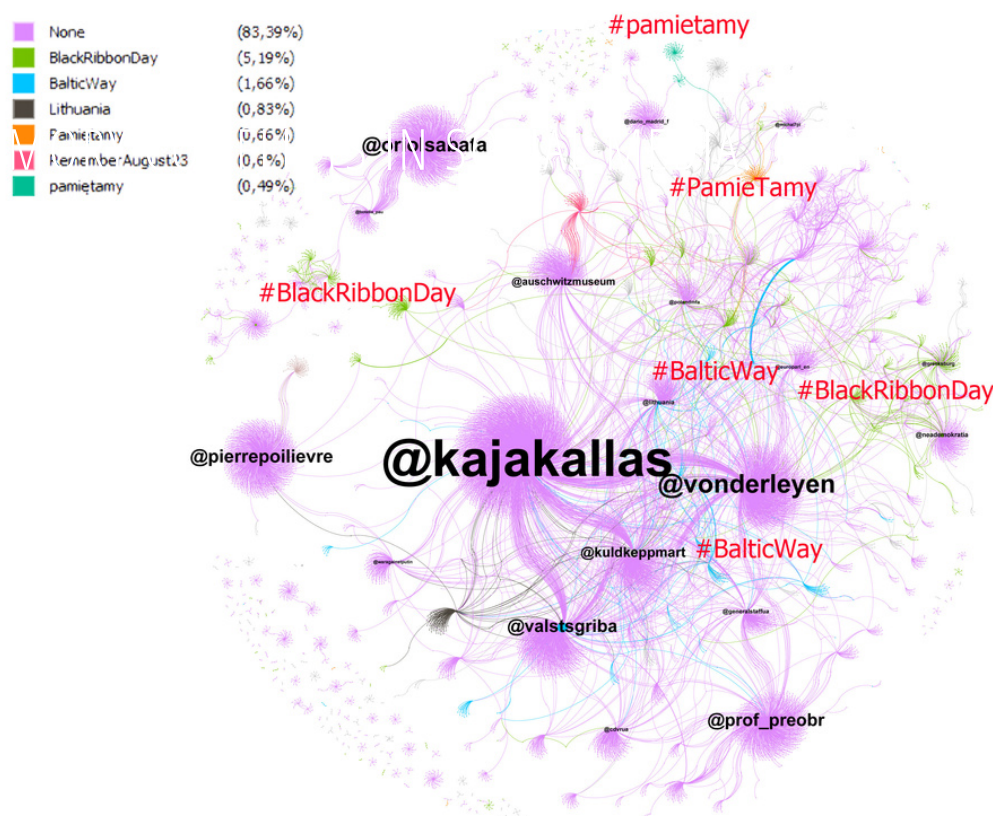


Fig. 4 Graph of RTs by hashtag

Spread across time

An alternative view to the spread shown by the graphs is the development of the posting of the original tweets across time. In this study, original messages are considered those that imply that the author created his or her own message, either by posting a text, by replying to another user's tweet or by quoting a tweet to which a comment is added. (This mode is also called retweet with comment). In all three cases it implies that the author typed a text that requires greater effort to spread than pressing a key. On Twitter there is a lot of amplification, with the percentage of retweeted messages above 80% in most of the topics studied. In this case, the percentage of original messages (tweets, quotes and responses) was 8.57%, so the percentage of amplification was 91.43%.

The following graphs analyse the development of the posting of both original and retweeted messages across time.

As usual, the intensity was lower in the days before and after the celebration. The bulk of the tweets were concentrated between 23 and 24 August. Fig. 5 shows the relationship between tweets posted and RTs received at one-hour intervals. It is a graph with two scales: tweets from 0 to 98 (there were 0 to 224 in 2021) and retweets from 0 to 660 (0 to 1,119 in 2020).

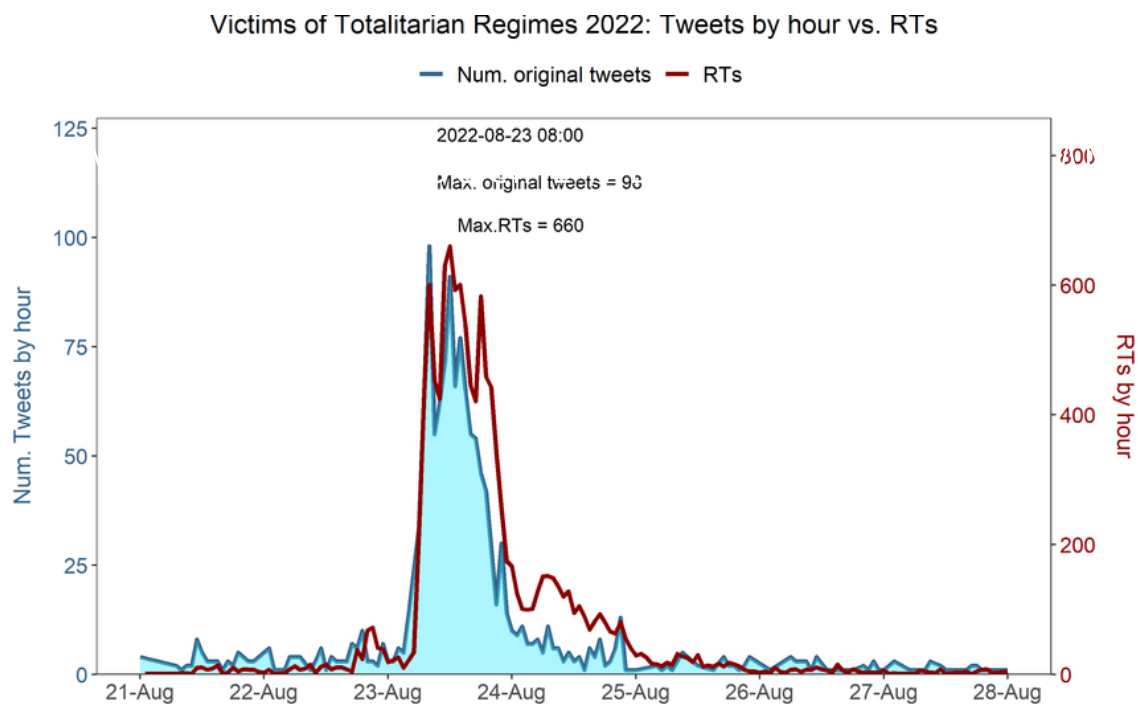


Fig. 5 Tweets vs. Retweets

The participation of important profiles is reflected in Fig. 6, which shows profiles with more than 200,000 followers that participated. Most of them were institutions and popular politicians. The participation of important media outlets is not observed. The double scale graph shows the relationship between the number of tweets published in an hour, originals or RTs, and their possible reach. Reach is calculated as the sum of the followers of those who posted each hour.

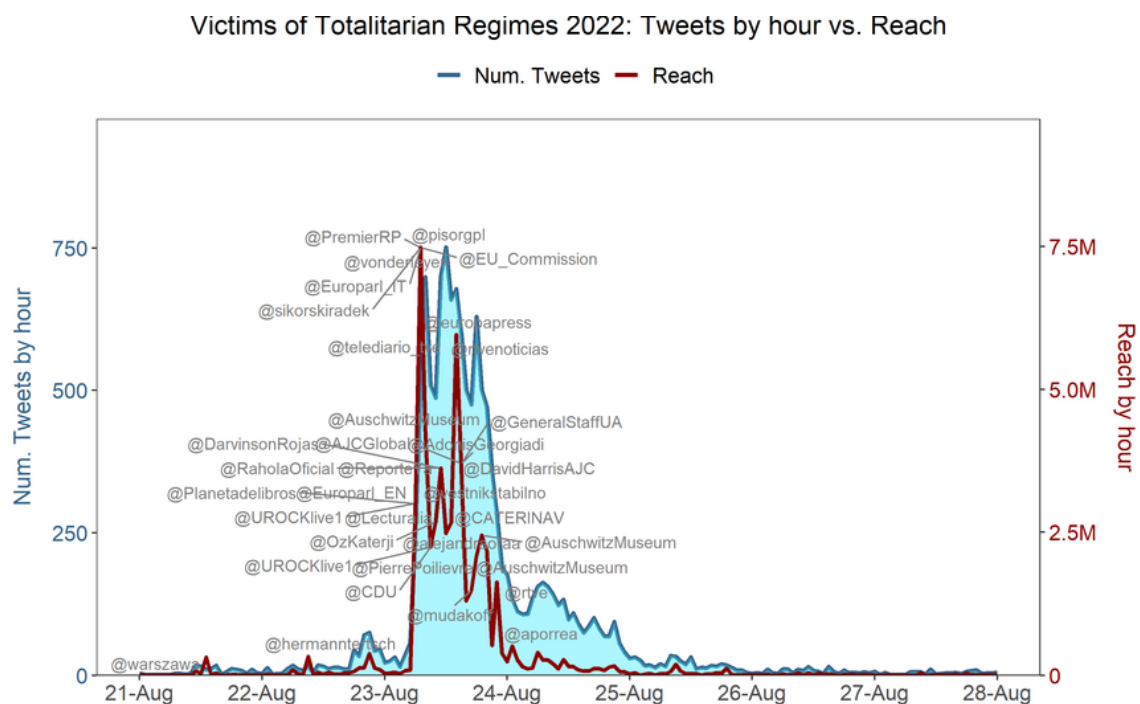


Fig. 6 Tweets vs. Reach

The participation of the different groups is shown in Fig. 7, in which European time zones prevailed over American ones, making the maximum posting time 8:00 GMT.

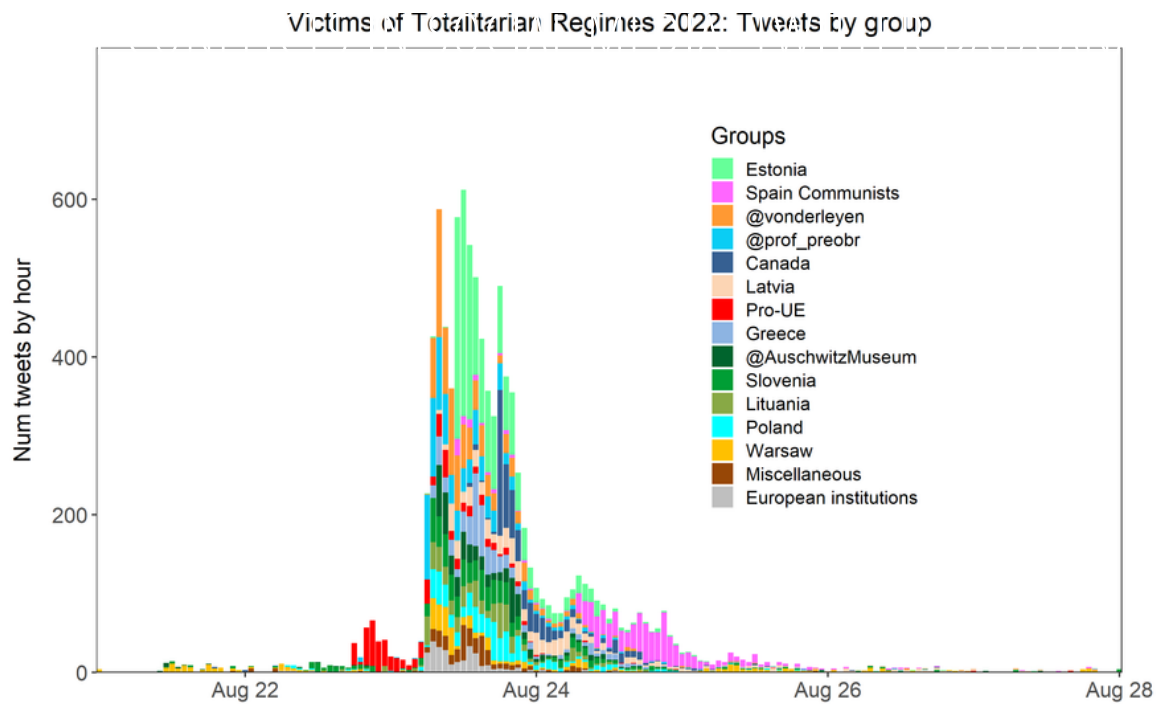


Fig. 7 Tweets by group

The inclusion of hashtags in the tweets (Fig. 8) was most common on 23 August. The most common hashtag was #BlackRibbonDay, followed by #BalticWay.

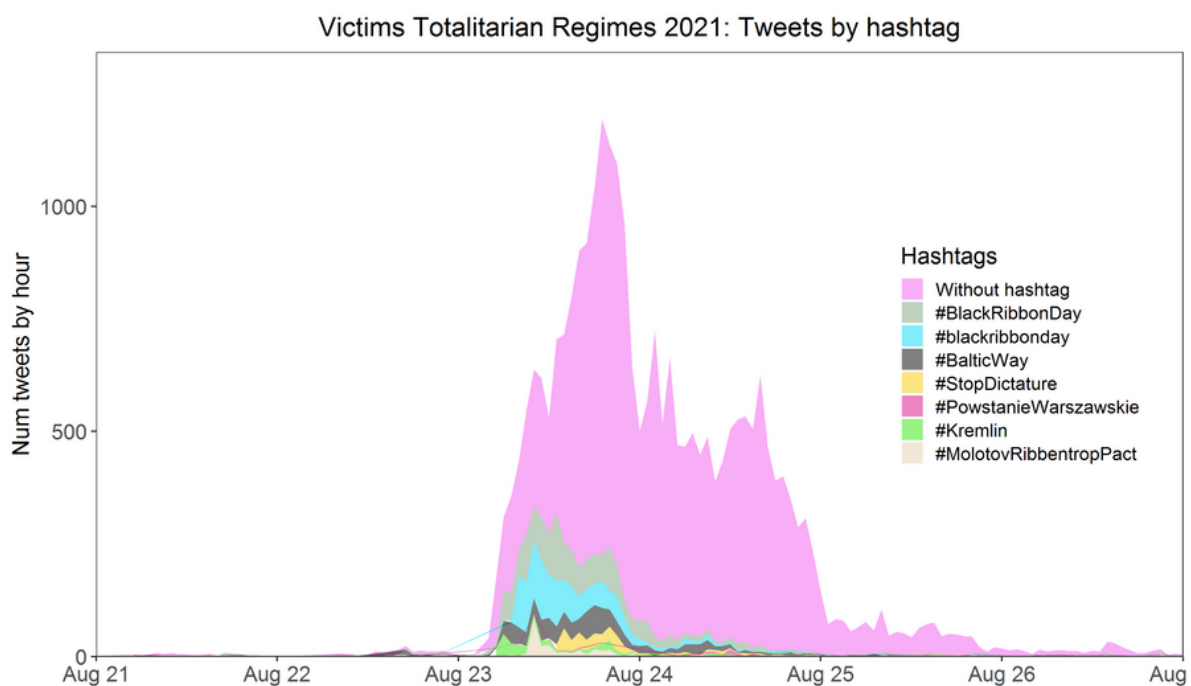


Fig. 8 Appearance of hashtags in the tweets

Analysing the spread by language (Fig. 9), we see that English dominated, followed by Spanish, Russian, Greek and Polish.

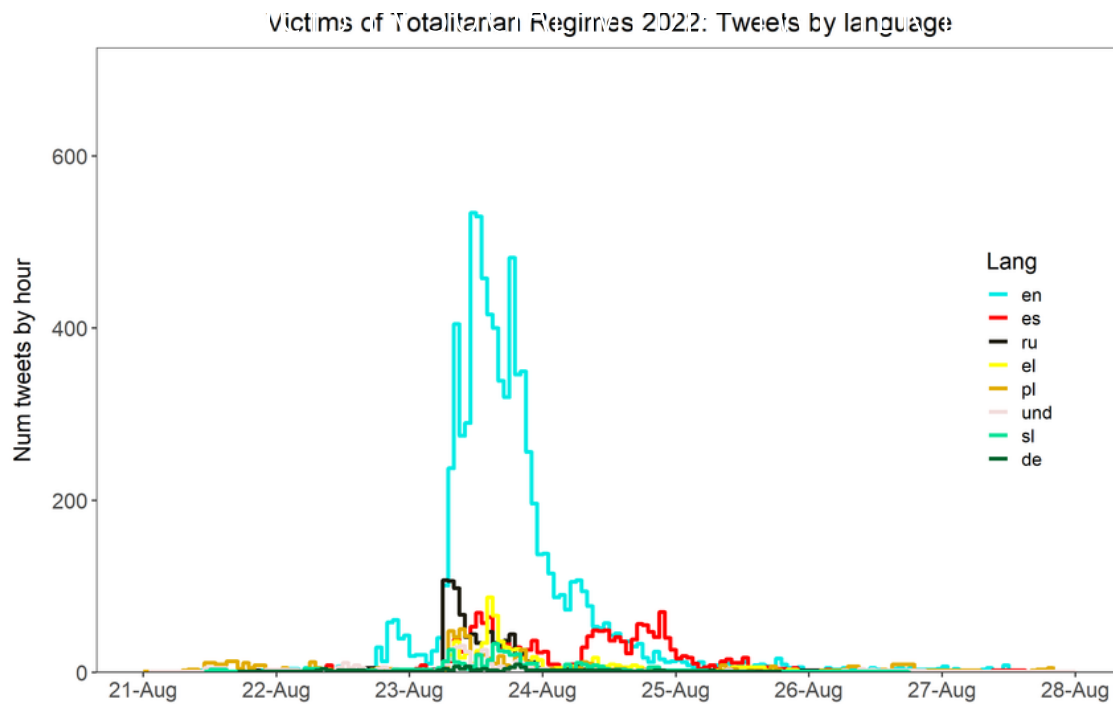


Fig. 9 Spread of tweets by language

The inclusion of hashtags in the tweets (Fig. 8) was most common on 23 August. The most common hashtag was #BlackRibbonDay, followed by #BalticWay.

National Holiday of Spain (Día de la Hispanidad) 2022 (October 12)

General data

Collection method	Twitter Streaming API (real time collection)
Collection period	October 7 to 15, 2022
Words searched	#12Octubre #12deOctubre #12Oct #Hispanidad Hispanidad Día de la resistencia indígena #DíaDeLaResistenciaIndígena #DiadelaRaza Día de la raza #NadaQueCelebrar #ResACelebrar Res A Celebrar #Ezerezospatzeko ezer ez ospatzeko #ColumbusDay Columbus Day #BlackLivesMatter
Number of tweets achieved	215,907
Number of tweets + RTs	1,278,219

Executive summary of 12 October

As in previous years, the celebration of *Día de la Hispanidad* on Twitter was divided between supporters and detractors. The favorable position is generally related to conservative environments and opposition to progressive positions. In 2022, the weight of both positions was similar to that of the previous year.

The structure of the groups was divided by the language barrier, but the groups remained connected by ideological similarity. Notably in this year's celebration:

- Venezuela continued to be the Latin American country that contributed the most tweets in this celebration, but its structure this year was not as polarized as in previous years.
- Mexico did not become an independent group, as its tweets were integrated into other groups due to ideological affinity.
- A group from Colombia appeared that is against the celebration and has connections to English-speaking groups.
- In the conservative environment, a group emerged in favor of the celebration in which well-known Formula 1 athletes appear.
- Humour-related tweets were closer to positions favourable to the event (the opposite occurred in 2021).
- Groups that used Spanish were more connected than in previous years.
- English-speaking groups were more active on 11 October than on *Día de la Hispanidad*.
- The use of labels was higher in progressive environments than in conservative ones.
- The amplification of messages increased.
- A greater use of Spanish was detected in the tweets.

Development of the participation

The development of activity on Twitter on *Día de la Hispanidad* showed a similar behavior to that of the year 2021 in the volume of tweets, though with greater amplification. The search terms were the same as the previous year, which included words in Catalan and Basque, along with some terms used in North America.

The percentage of RTs compared to original tweets was the highest in the four years that this event has been studied.

The number of one-time users who participated fell slightly, though it was higher than the first two years analysed. Nevertheless, it must be taken into account that:

- In 2019 the data were collected with webscraping, so fewer tweets were collected.
- In 2020, due to an error in data capture, tweets with the hashtag #1Oct or the word Hispanidad were not collected (both words were separated with a period instead of a comma). These tweets could not be retrieved with the API because the error was detected too late and because the webscraping method has stopped working on Twitter. In 2020, it must also be borne in mind that national holiday parades were not held due to COVID-19.
- In 2021, US profiles were included.

Year	Original tweets	Tweets + RTs	% RTs	One-time users
2019	33,740	134,462	74.90%	61,491
2020	105,952	594,954	82.19%	262,378
2021	305,225	1,252,691	75.63%	457,520
2022	215,907	1,278,219	83.11%	433,155

Table 1: Development of the participation

The following table shows the words selected for each year.

In 2021 it was extended to other languages (English, Catalan and Basque).

Graph of RTs

The spread structure shows two blocks, separated by language: English (top) and Spanish-speaking (bottom). If we divide the graph vertically, on the right we see the supporters of the celebration and on the left we see the opponents. These blocks are further divided into groups by ideology or geography (Fig. 2).

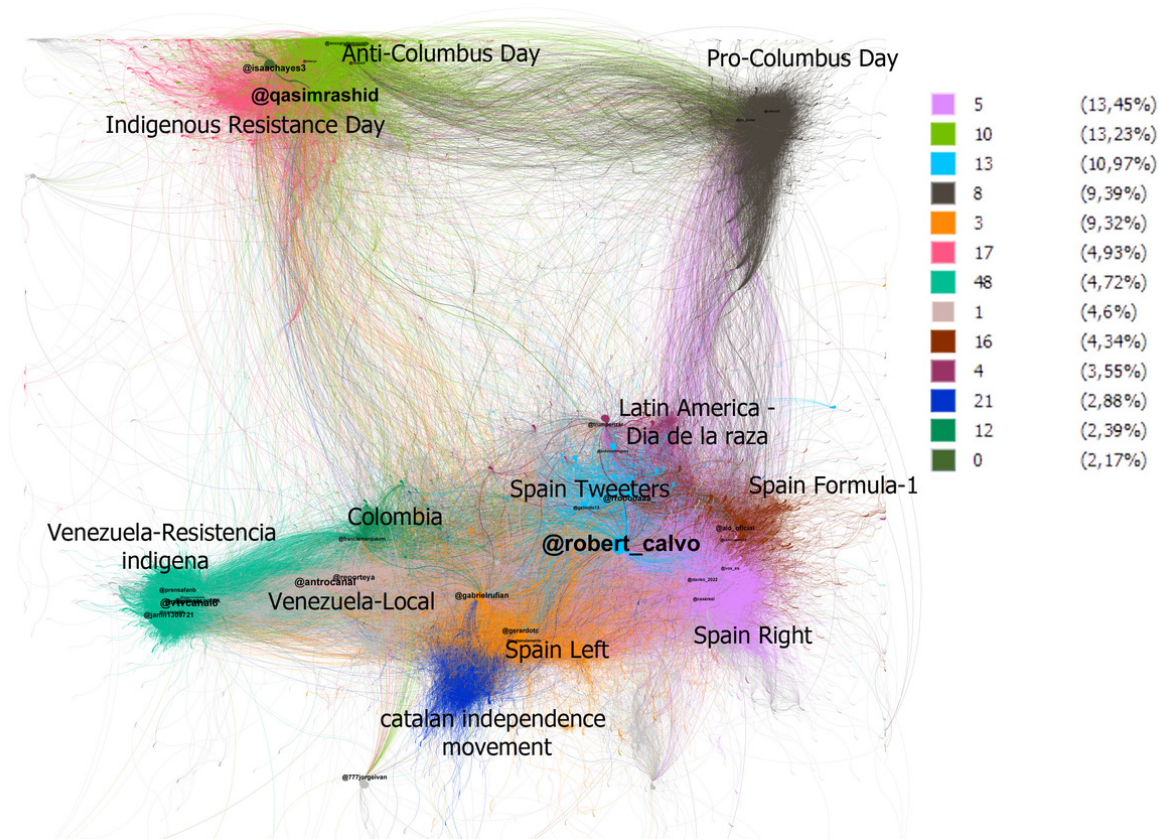


Fig. 2 Spread of tweets by community

Opinions are divided about the celebration of *Día de la Hispanidad* that is reflected in the graph as follows:

- In the English-speaking world, there are two groups opposed to the celebration of the discovery: "Anti-Columbus Day" (13.23%) and "Indigenous Resistance Day" (4.93%). The supporting group is "Columbus Day" (9.39%). The opposing opinion prevails and is almost double the positive one (from 18.16% to 9.39%).
- In the Spanish-speaking block, groups opposing the holiday include "Spain Left" (9.32%), "Venezuela-Resistencia indígena" (4.72%), "Catalán Independence movement" (2.88%) and "Colombia" (2.39%). Support groups include "Derecha Española" (13.45%), "Spain Formula-1" (4.34%), "Latin America-Día de la Raza" (3.55%). The group "Spain Tweeters" (10.97%) is ironic and varied in memes, though it is more related to favourable groups. The Venezuela-Local group (4.6%) could be considered neutral because it tweets about local issues, though it also uses the #12Oct hashtag. The balance would be 19.01% against compared to 21.32% in favor (not including the ironic group), which is similar to the previous year.

The structure of the groups has changed compared to 2021. Venezuela continued to be the Latin American country that contributed the most tweets for the celebration, but its structure this year was not as polarised as in previous years. Mexico did not become an independent group, as its tweets were integrated into other groups by ideological affinity. A group from Colombia appeared that opposed the celebration and had connections to English-speaking groups. The group of humour-related tweeters was closer to positions in favour of the event, unlike in 2021.

Spanish dominated in the language distribution (Fig. 3), since it is the most common language in the countries that participated, at 59.47% (51.59% in 2021). The second most frequently used language was English, at 34.37% (40.47% in 2021). Catalan came in third place, at 1.86% (2.8% in 2021). We cannot compare this year with 2020 because keywords in English, Catalan and Basque were not included.

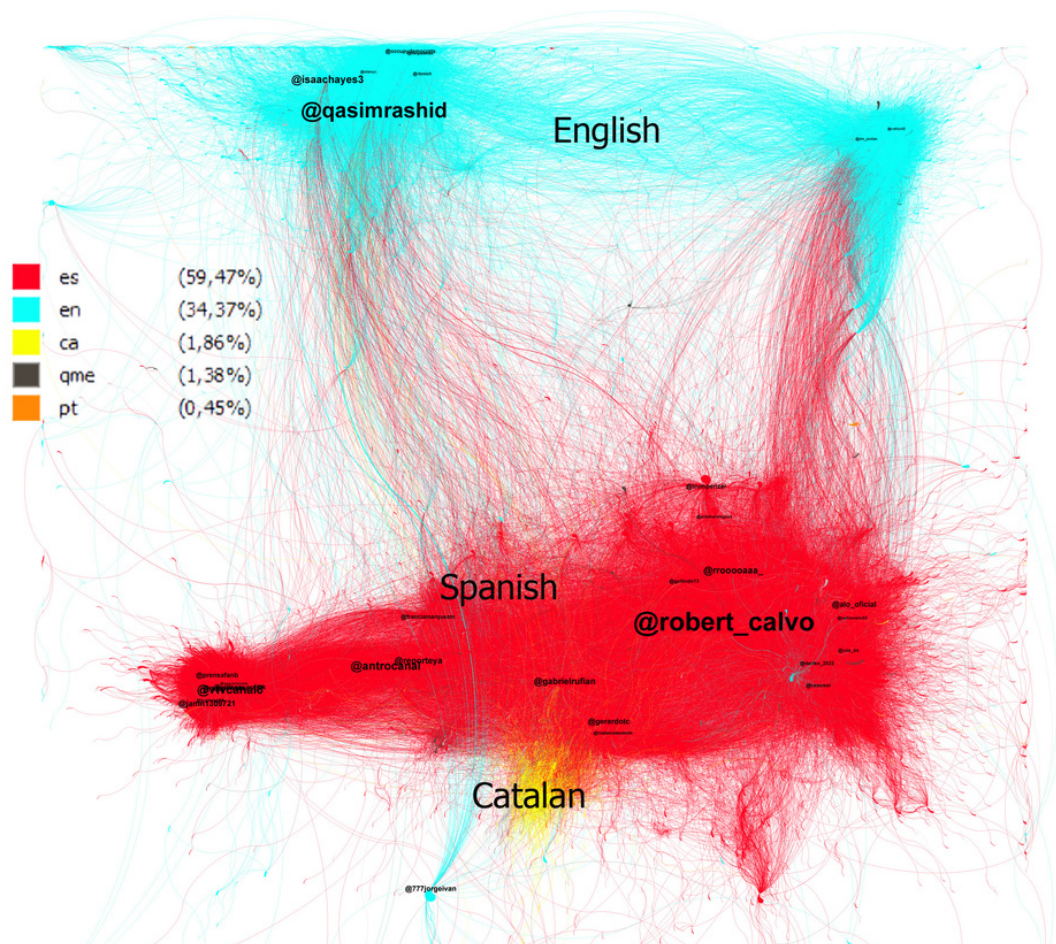


Fig. 3 Graph of RTs by language

Examples of some content from the communities

Examples of some content from the communities



Tweet captured by [screenshot.guru](#)

1580176385955737600



Tweet captured by [screenshot.guru](#)

1580169232121180160

The use of hashtags was in some cases geographical, such as #12Oct, which was used by the two groups from Venezuela. In other ideological cases, #NadaQueCelebrar and #ResACelebrar was used on the left and groups supporting Catalan independence. The Spanish right used #12Octubre and #Hispanidad and the Ibero-American countries and Spanish left opposed to the celebration used #12DeOctubre and #12deOctubre.

Due to limitations of format when making this graph, only one label can be included. In this case, the choice was made to select the first hashtag that appears in the tweet, considering it the most important. There may be secondary hashtags that were also frequent, but do not appear here for this reason.

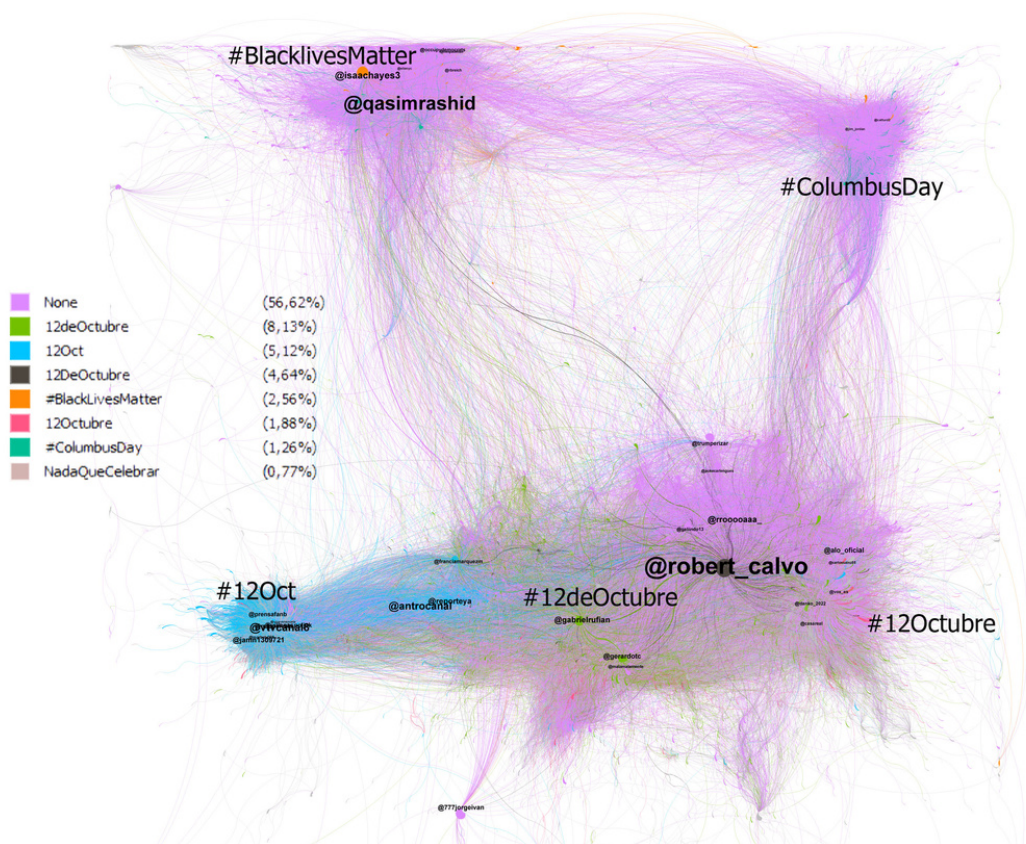


Fig. 4 Graph of RTs by hashtag

Spread across time

An alternative view to the spread shown by the graphs is the development of the posting of the original tweets across time. In this study, original messages are considered those that imply that the author created his or her own message, either by posting a text, by replying to another user's tweet or by quoting a tweet to which a comment is added. (This mode is also called retweet with comment). In all three cases, it implies that the author typed a text that requires greater effort to spread than pressing a key. On Twitter, there is a lot of amplification, with the percentage of retweeted messages above 80% in most of the topics studied. In this case, the percentage of original messages (tweets, quotes and responses) was 16.89%, so the percentage of amplification was 83.11%.

The following graphs analyze the development of the posting of both original and retweeted messages across time.

As usual, the days before and after the celebration, the intensity was lower. The bulk of the tweets were concentrated between 11 and 12 October. Fig. 5 shows the relationship between tweets posted and RTs received at one-hour intervals. It is a graph with two scales: tweets from 0 to 10,217 (there were 0 to 12,792 in 2021) and retweets from 0 to 44,365 (0 to 36,805 in 2021). This year, there was a higher percentage of RTs than the previous year.

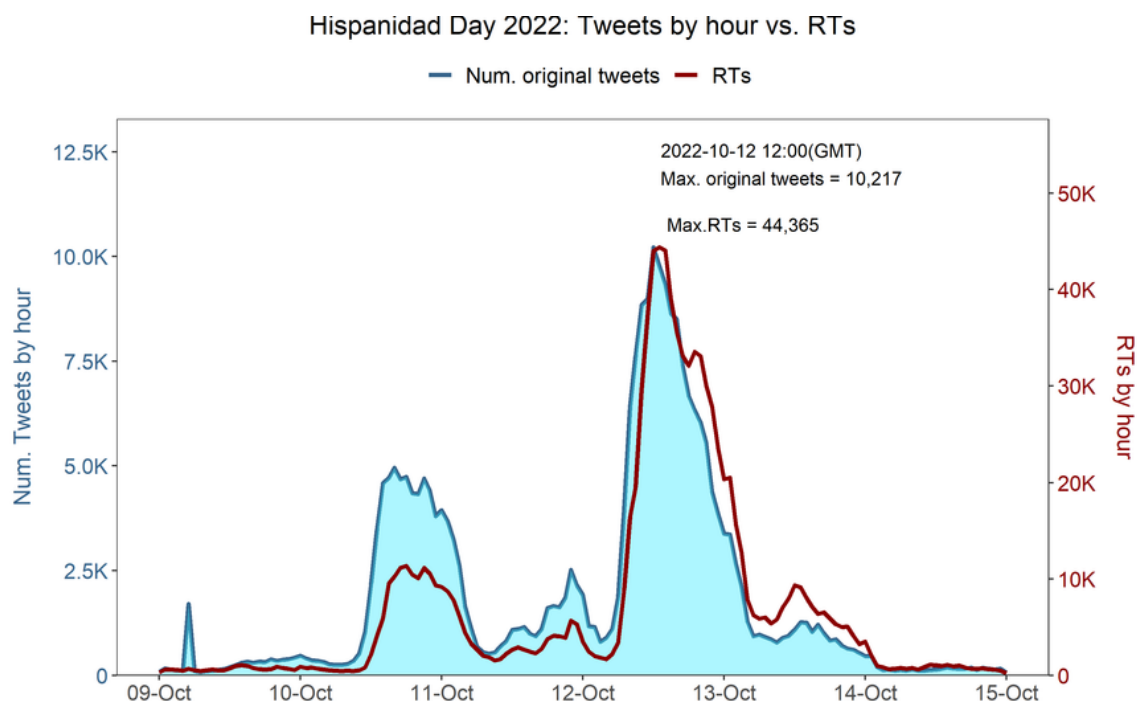


Fig. 5 Tweets vs. RTs

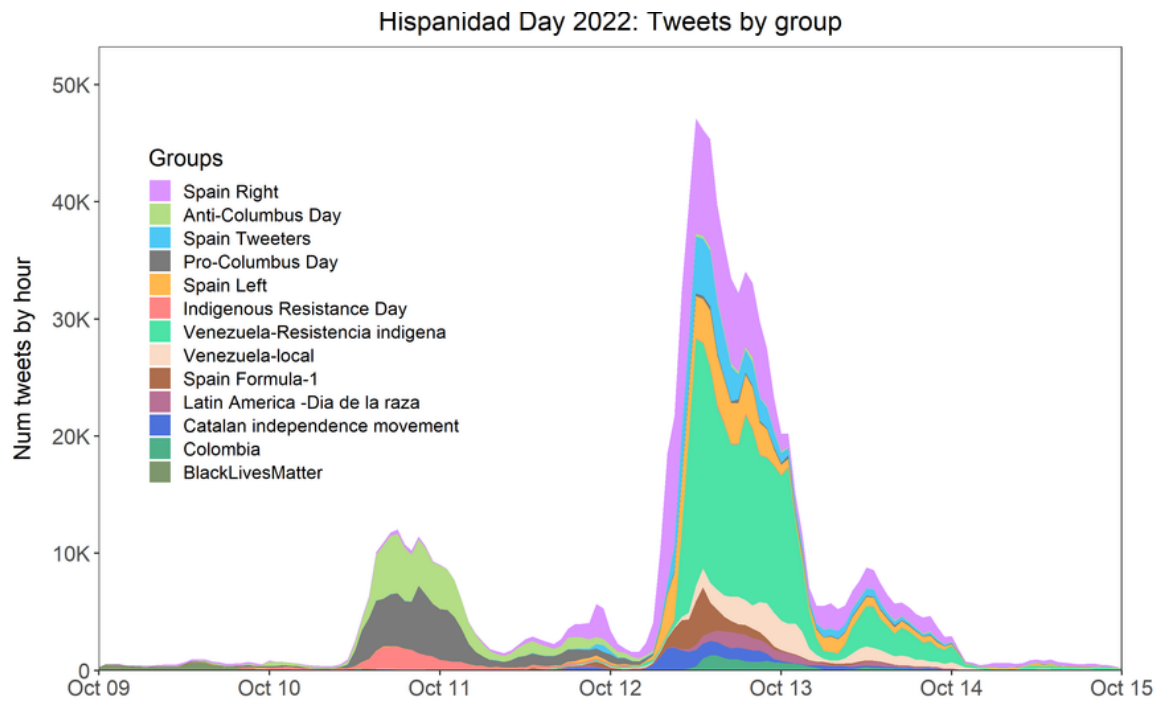


Fig. 7 Tweets by group

The group “Venezuela-Indigenous Resistance” (light green colour) had a lot of amplification, as many tweets were posted by a small group of profiles (seventh position regarding the number of accounts).

The appearance of hashtags in the tweets (Fig. 8) was concentrated on 12 October, with the most frequent hashtags used being #12deOctubre, followed by #12Oct and #12deDeOctubre. The hashtag #12Oct appeared in a great many tweets due to the amplification of the “Venezuela-Resistencia indígena” group.

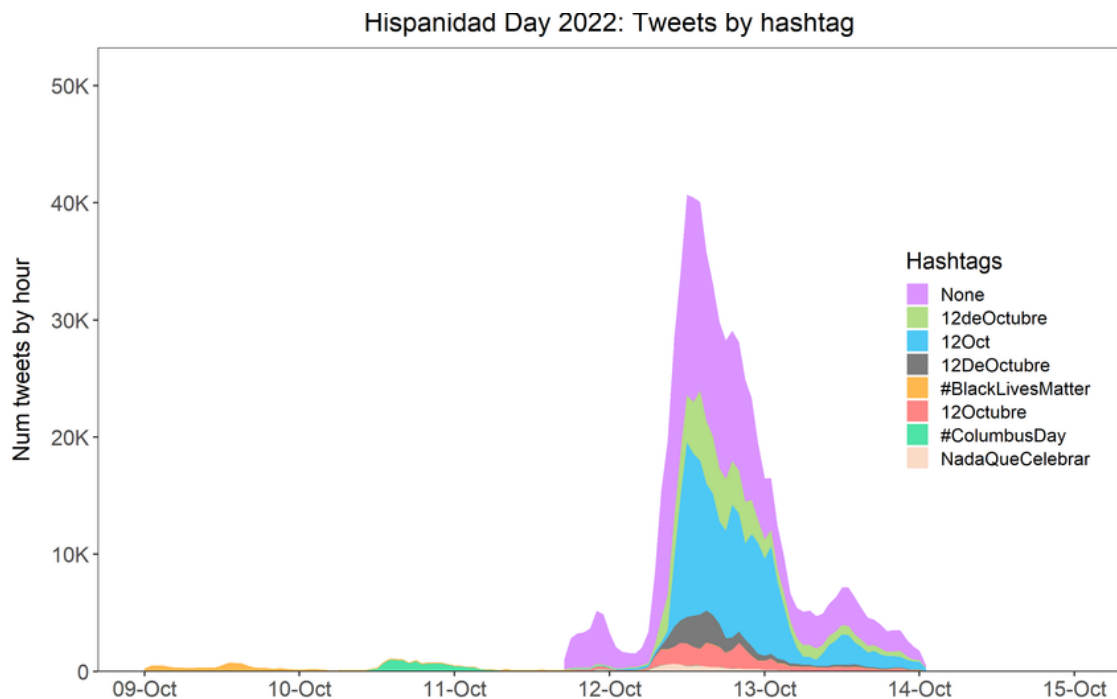


Fig. 8 Appearance of hashtags in the tweets

By analysing the spread of language (Fig. 9), it can be seen that Spanish dominates, followed by English and Catalan. English was concentrated on the eve of Día de la Hispanidad.

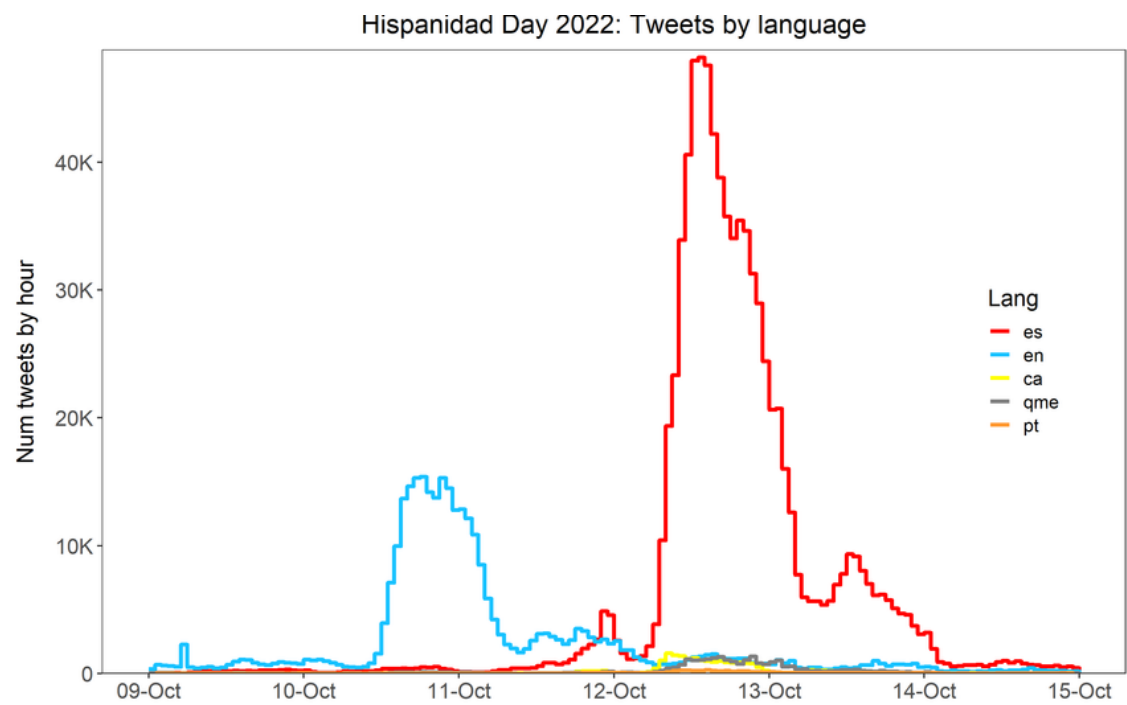


Fig. 9 Spread of tweets by language

Anniversary of the death of Francisco Franco 2022 (November 20)

General data

Collection method	Streaming API
Collection period	November 8 to 18, 2022
Words searched	<div>#20N 20N Aniversario muerte de franco Aniversario muerte del dictador Franco murió en la cama Valle de los caídos Primo de Rivera Transición española Dictadura franquista Franquismo muerte de Franco #Fracoland Franquisme</div>
Number of tweets achieved	45.437
Number of tweets + RTs	192.948
Data 20N_2022.xlsx: Sheets: Tweets: original tweets Users: users of the giant component ordered from the most to the least connections Top: tweets most shared by the community	

Executive summary

The anniversary of Franco's death creates a very sharp polarisation between right-wing and left-wing ideology. The reactions come from the most radical part of these ideologies and are usually very extreme.

In relation to 2021, the following was observed:

- Fragmentation on the left and unification on the right. The current division of the groups further to the left of the PSOE is even reflected in an issue on which they all agree. However, a fairly cohesive group appears on the right.
- Less participation of the Catalan independence movement, falling from 10.92% to 6.03%.
- The Antifascism and transgender group of 2021 disappeared and a pro-Russian left-wing group emerged. This shows that current events shape the participation of the groups.
- In 2022, there were no events before or after 20N that attracted attention, with the activity mainly focused on the celebrations of the anniversary of Franco's death and the tributes to José Antonio Primo de Rivera.
- The groups on the left generated more amplification than those on the right, with a higher proportion between the number of tweets posted and participating profiles.
- The percentage of profiles that tweet in Spanish rose slightly.

Development of the participation

Twitter data for the anniversary of Franco's death was collected for the first time in 2021. This year, total and original tweets and one-time users all decreased.

Year	Original tweets	Tweets + RTS	% RTS	One-time users
2021	45,437	246,784	81.62%	85,748
2022	34,147	192,948	82.30%	67,316

Table 1: Development of the participation

The following table shows the words selected for each year:

2021	2022
#20N 20N Aniversario muerte de franco Aniversario muerte del dictador Franco murió en la cama Valle de los caídos Primo de Rivera Transición española Dictadura franquista Franquismo muerte de Franco #Fracoland Franquisme	#20N 20N Aniversario muerte de franco Aniversario muerte del dictador Franco murió en la cama Valle de los caídos Primo de Rivera Transición española Dictadura franquista Franquismo muerte de Franco #Fracoland Franquisme

Table 2: Monitored words

Graph of RTs

In addition to the celebration of the anniversary of Franco's death, 20N coincided with a demonstration in Peru against President Pedro Castillo who used the hashtag #ReaccionaPeru 20N. These data have been removed for the analysis.

The graph shows a two-block structure, associated with polarisation in which the tweets circulate through two echo chambers. The left block groups profiles related to left-wing ideology, the Catalan independence movement, Republicans and tweeters. On the right side are profiles related to the right (Fig. 2).

The block on the left is fragmented into the following groups, ordered from largest to smallest: "Left-I" (17.03%, lemon green colour), "Left-II" (11.14%, turquoise blue colour), "Left-III" (9.94%, dark grey), "Tweeters" (7.63%, orange), "Catalan Independence Movement" (6.03%, fuchsia), "Pro-Russian Left" (5.67%, navy green), "Republicans" (3.73%, flesh-coloured) and other smaller groups. The block on the right is made up of a single "Right" group (19.68%, purple).

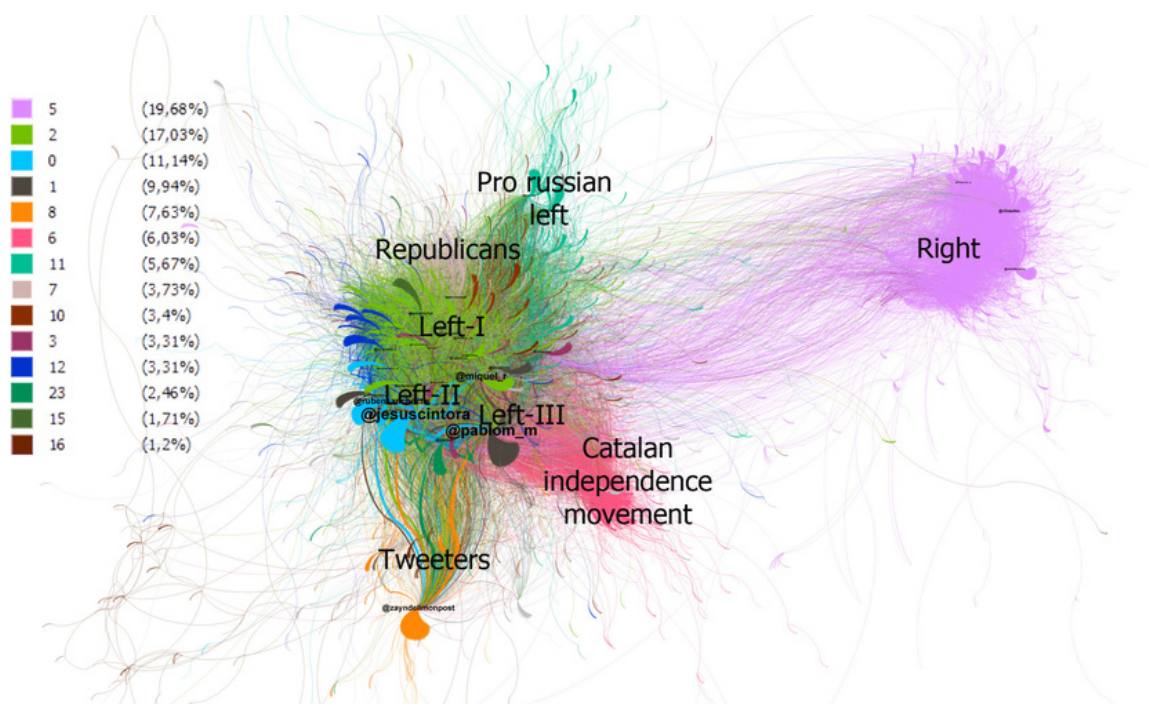


Fig. 2 Spread of tweets by community

Examples of the most commonly spread content from the communities



Tweet captured by [screenshot.guru](#)

1594680926117715968



Tweet captured by [screenshot.guru](#)

1594310540647997448



Tweet captured by [screenshot.guru](#)

1594076257925632796

Spanish dominated in the language distribution (Fig. 3), at 88.81% (84.91%, in 2021), followed by Catalan, at 6.67% (8.82%, in 2021). Catalan was used the most in tweets by Catalan independence groups, though there were crossed RTs in both languages with the left-wing group (yellow and red area).

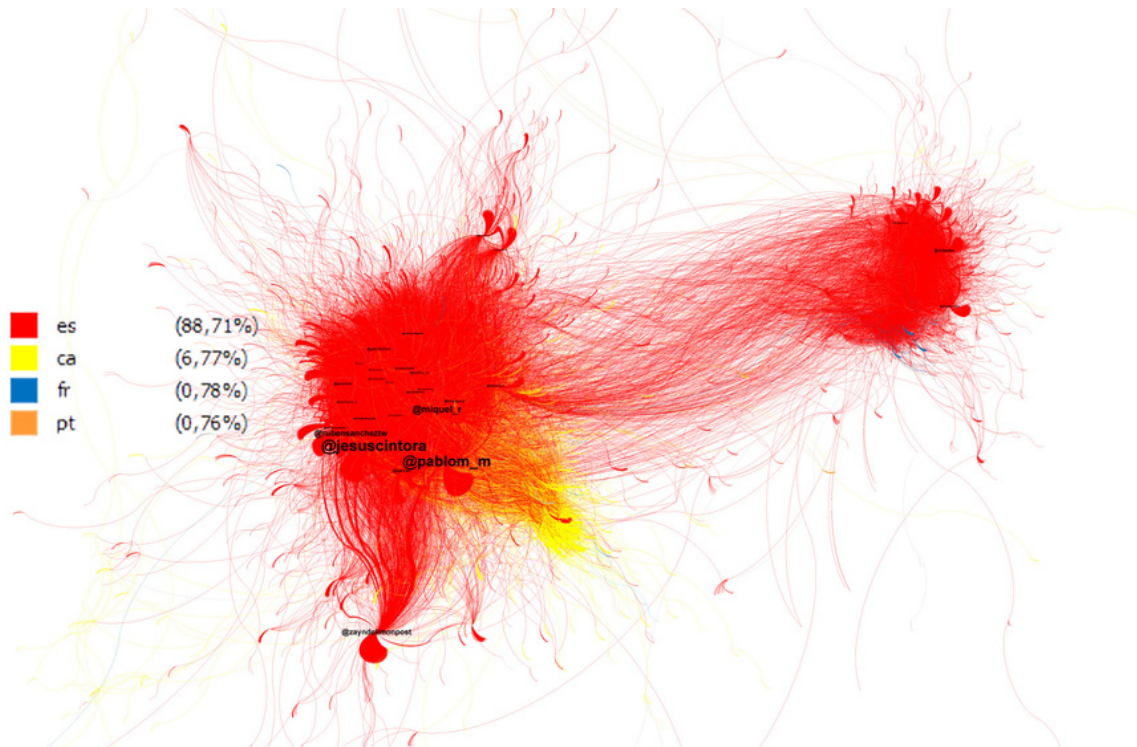


Fig. 3 Graph of RTs by language

The existence of hashtags was testimonial, with only 3.2% (8.03% in 2021) of the users using the hashtag #20N. Most of the tweets did not include a hashtag (Fig. 4). The few hashtags detected were located in the groups “Republicans” and “@armh_memoria”.

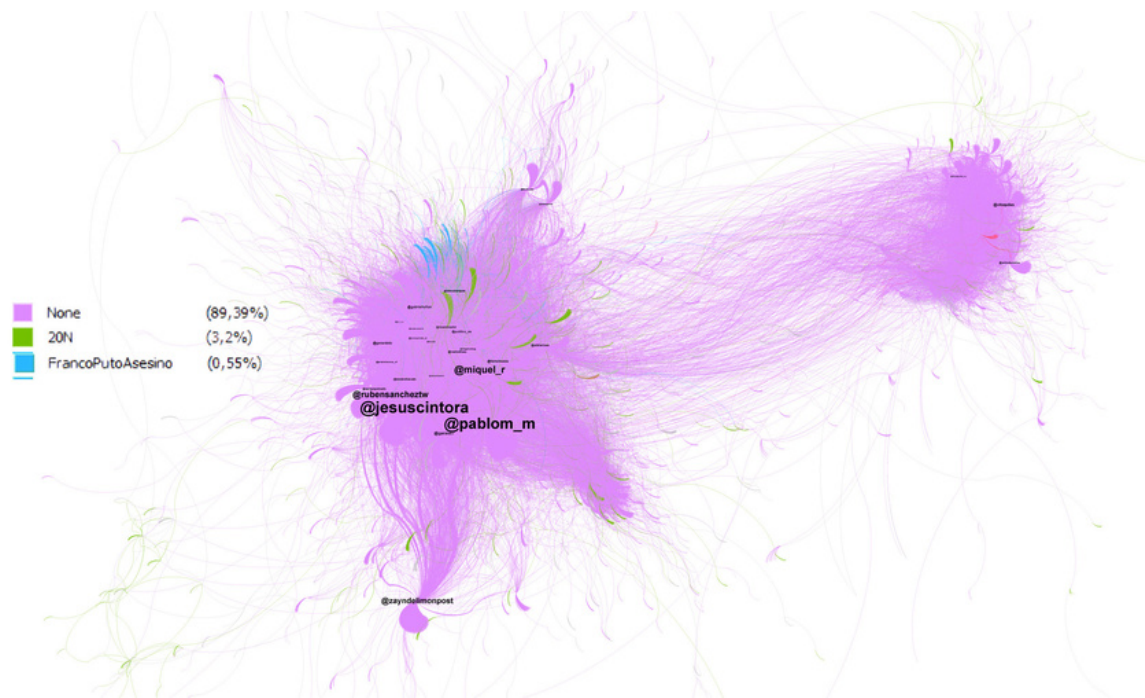


Fig. 4 Graph of RTs by hashtag

Spread across time

An alternative view to the spread shown by the graphs is the development of the posting of the original tweets across time. In this study, original messages are considered those that imply that the author created his or her own message, either by posting a text, by replying to another user's tweet or by quoting a tweet to which a comment is added. (This mode is also called retweet with comment). In all three cases it implies that the author typed a text that requires greater effort to spread than pressing a key. On Twitter there is a lot of amplification, with the percentage of retweeted messages above 80% in most of the topics studied. In this case, the percentage of original messages (tweets, quotes and responses) was 17.7%, so the percentage of amplification was 82.30%.

The following graphs analyse the development of the posting of both original and retweeted messages across time.

The greatest activity was concentrated on 20 and 21 November, though the activity continued with a small rebound on 28 November.

Fig. 5 shows the relationship between tweets posted and RTs received at one-hour intervals. It is a graph with two scales: tweets from 0 to 1,036 (there were 0 to 674 in 2021) and retweets from 0 to 5,668 (0 to 2,831 in 2021). This year, there was a higher percentage of RTs than the previous year because the tweets were posted in two days while in 2021 they were posted in six due to the events before and after the celebration.

On 17 November 2021, there was a sharp rise as a result of the repeal of the amnesty law, which was mitigated until 20 November, when it rose again and reached the maximum posting value. The news of Pablo Casado's attendance at the mass for Franco kept the level of posting high for three more days. In 2022, there were no events before or after that amplified the tweets.

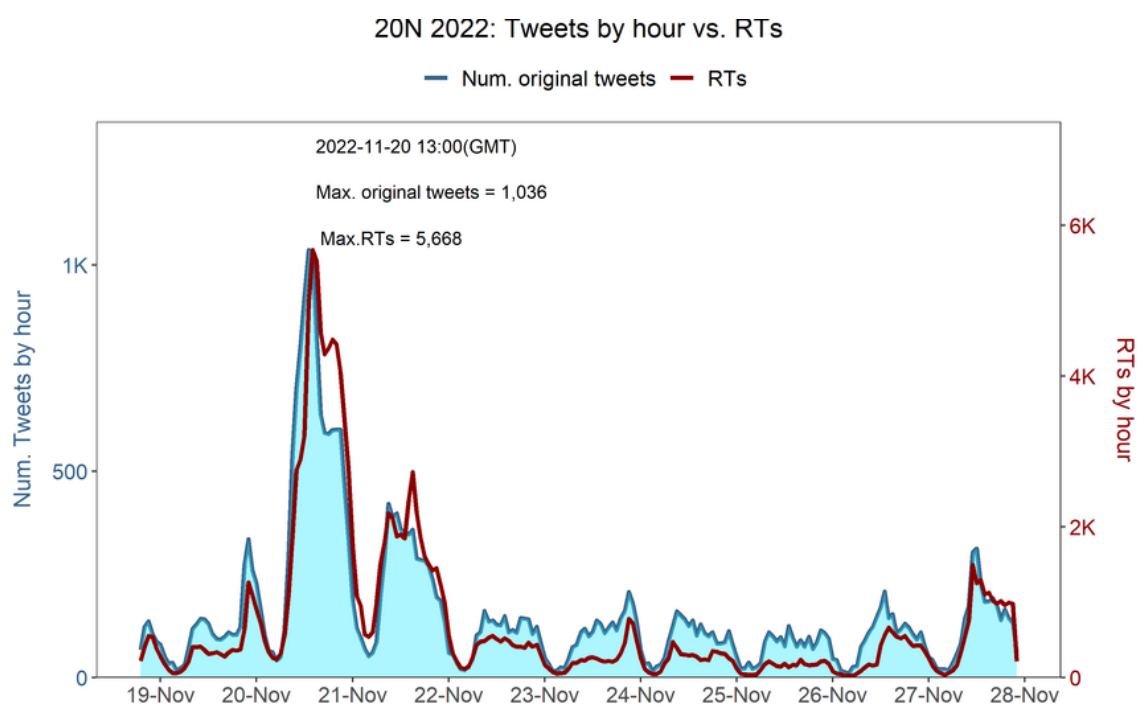


Fig. 5 Tweets vs. Retweets

The participation of important profiles is reflected in Fig. 6, which shows profiles with more than one million followers that participated. Most of them were progressive media outlets. The double scale graph shows the relationship between the number of tweets posted in an hour, originals or RTs, and their possible reach. Reach is calculated as the sum of the followers of those who posted each hour.

We can see that on 21 November there was great media participation (greater reach), but the proportion of the number of tweets decreased.

— Num. Tweets — Reach



20N 2022: Tweets by group



The groups on the left had more amplification than those on the right. This is observed in the lemon green, turquoise and dark grey groups with a higher volume of tweets and fewer participating profiles.

The appearance of hashtags in the tweets (Fig. 8) was concentrated on 20 November and the most common hashtag was #20N.

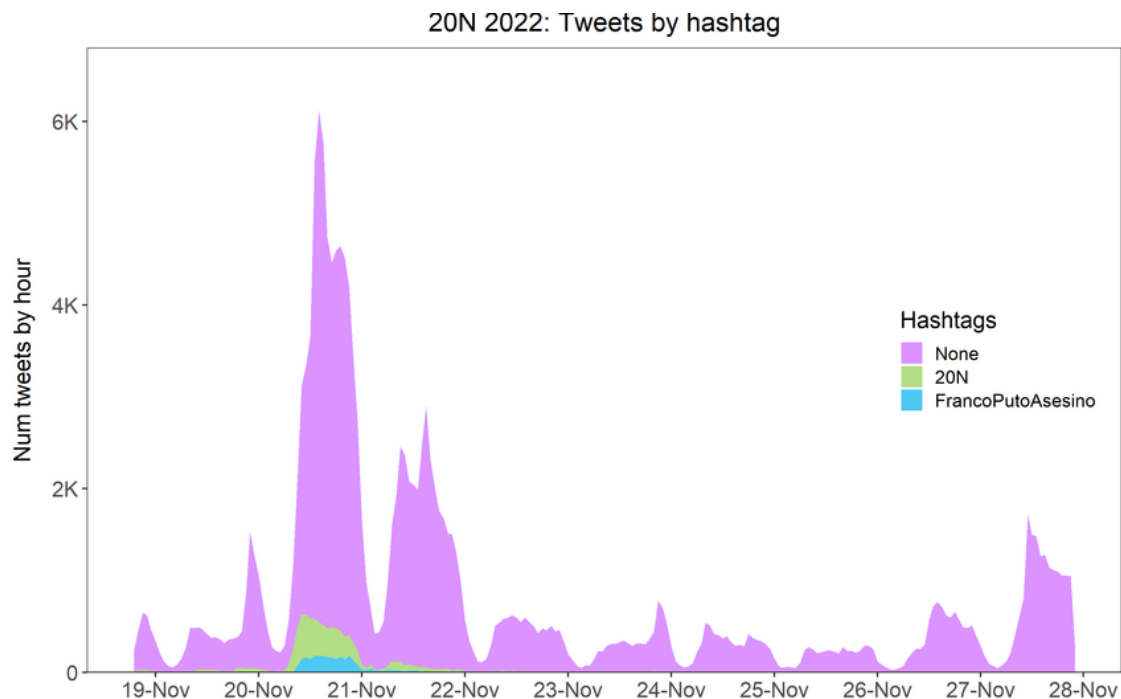


Fig. 8 Appearance of hashtags in the tweets

By analysing the spread by language (Fig. 9) we can see that Spanish dominated, followed by Catalan. The day that the most tweets were posted in Catalan was 20 November.

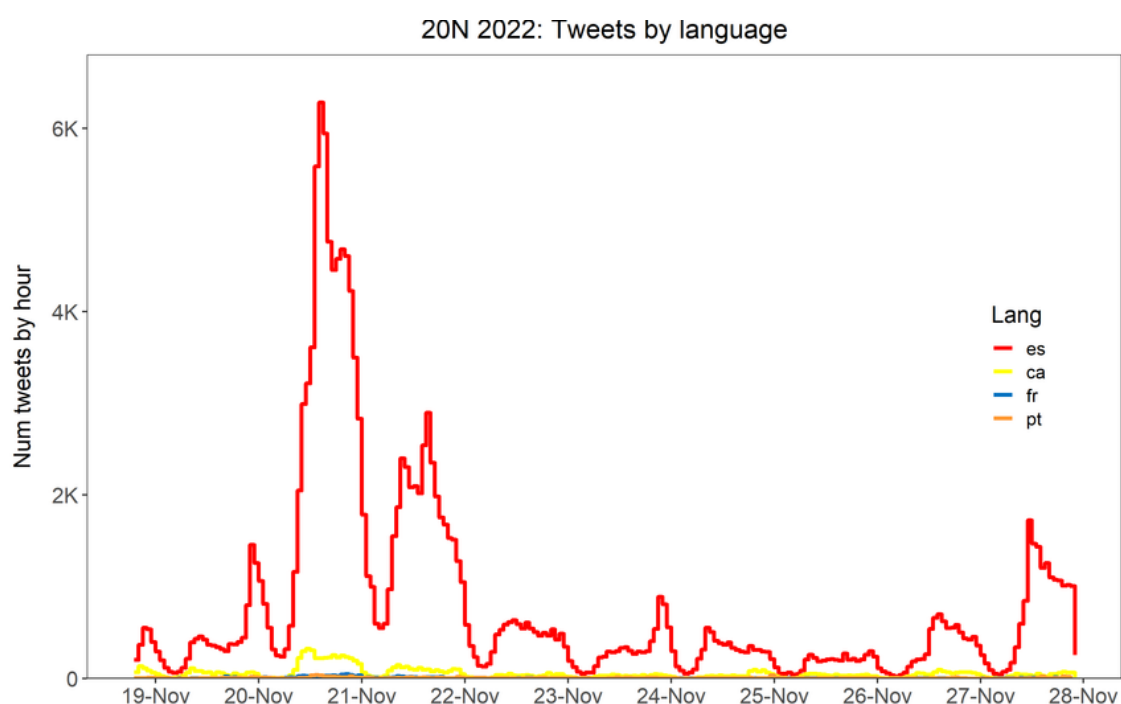


Fig. 9 Spread of tweets by language



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UNIVERSITAT DE BARCELONA

ONLINE MEMORIES. MEMORY CONFLICTS IN SOCIAL MEDIA. TWITTER DATA ANALYSIS.
SEVENTH REPORT. SEPTEMBER 2022.

A PUBLICATION BY EUROM - EUROPEAN OBSERVATORY ON MEMORIES OF THE UNIVERSITY OF BARCELONA'S
SOLIDARITY FOUNDATION, IN COLLABORATION WITH HISMEDI - HISTORIA, MEMORIA Y SOCIEDAD DIGITAL,
UNIVERSIDAD CARLOS III. CO-FUNDED BY THE PROGRAMME CITIZENS, EQUALITY, RIGHTS AND VALUES (CERV)
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