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Data collection

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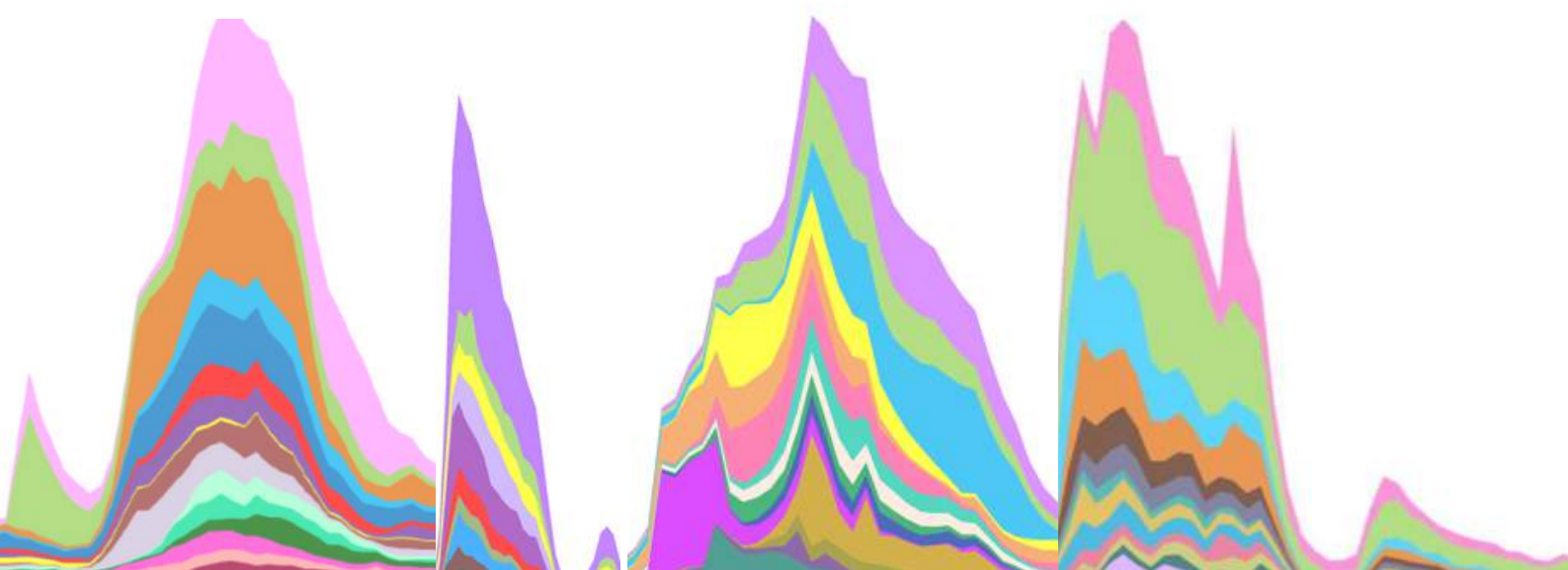
With the advice of

HISMEDI - UNIVERSITY CARLOS III

ONLINE MEMORIES

MEMORY CONFLICTS IN SOCIAL MEDIA. TWITTER DATA ANALYSIS

7th REPORT | JULY 2022



Preliminary considerations

For more than three years, the Online Memories project has sought to monitor and analyse memories on the web, specifically on Twitter, through the narratives of the different communities we have identified. During this time, we have developed a transdisciplinary collaboration (memory studies - computer science) that has also enabled us to discuss an interpretative theoretical body. The idea of this project has always been to address, from social science, the opportunities offered by the digital world as a space not only for storing information, but also as a space for socialisation and, therefore, where all the conflicts and phenomena of society are replicated and reproduced. To this end, we have theorised about the hashtag as a place of memory, about sociological profiles and what are known as Twitter bubbles, and also about such commonplace phenomena as Fake News and the limits of information circuits, in order to be able to interconnect all of these elements.

This is the last year of this project as we consider to have produced enough material to enable future approaches, discussion, and debate. The results have been materialised in seven reports, reachable on the EUROM website [1]. The 8th report will be issued in the first trimester of 2023 and will contain a theoretical summary, a broad reflection on the results of the project as a whole, a methodological assessment, as well as an update of the sociological profile.

[1] <https://europeanmemories.net/projects/online-memories/>

This 7th report covers the most important commemorations and dates of the first half of 2022 at the European level: the International Holocaust Remembrance Day (27th January) and Europe Day (9th May). They are two stable public holidays which, as we noted in the previous report, facilitate better comparative monitoring.

In addition, at the Spanish level, we have maintained the collection of data on the commemoration of the Second Spanish Republic (14th April), a date which, as we recall, has no official recognition. At a global level, two new commemorations have been added here: on the one hand, International Women's Day (8th March), a date that concentrates a large part of the memories of feminism, and on the other, International Day of Remembrance of and Tribute to the Victims of Terrorism (11th March). [see table I].

This last report of our series also appreciates contextual issues that clearly affect its results, such as the restrictions in Europe related to COVID-19 during the first months of the year and, especially, the war in Ukraine, which has generated enormous attention, also on social media.

Table I. Summary of the periodicity of commemorations

Commemoration	2019	2020	2021	2022
Europe Day	X	X	X	X
International Holocaust Remembrance Day	X	X	X	X
International Women's Day			X	X
International Day of Remembrance of and Tribute to the Victims of Terrorism				X
Day of the Proclamation of the Second Republic	X	X	X	X

Case studies



INTERNATIONAL HOLOCAUST REMEMBRANCE DAY IN MEMORY OF THE HOLOCAUST VICTIMS

Without delving again into the origin of this commemoration, which was recognised 17 years ago, we should begin by pointing out that in 2022 participation on social media around this event was higher than in the previous year, and was only surpassed by that of 2020, when the 75th anniversary of the liberation of the Auschwitz camp was held (Table II). This year, a total of 386,187 Tweets (reaching 2,046,016 through RTs) were recorded between 15th and 30th January - through a combination of webscraping and API monitoring.

Table II. Evolution of participation.

Year	Original Tweets	Tweets + RTS	%RTS	Unique users
2019	26,954	123,776	78.22%	69,574
2020	453,154	2,615,474	82.67%	1,111,775
2021	267,836	1,487,221	81.99%	738,877
2022	386,187	2,046,016	81.12%	781,825

Regarding the search criteria, the following table (table III) shows the words selected, which were the same in 2020, 2021 and 2022. In 2019, not as many languages were included in the search criteria, and therefore a lower participation was detected, although the impetus of the 75th anniversary should also be taken into account.

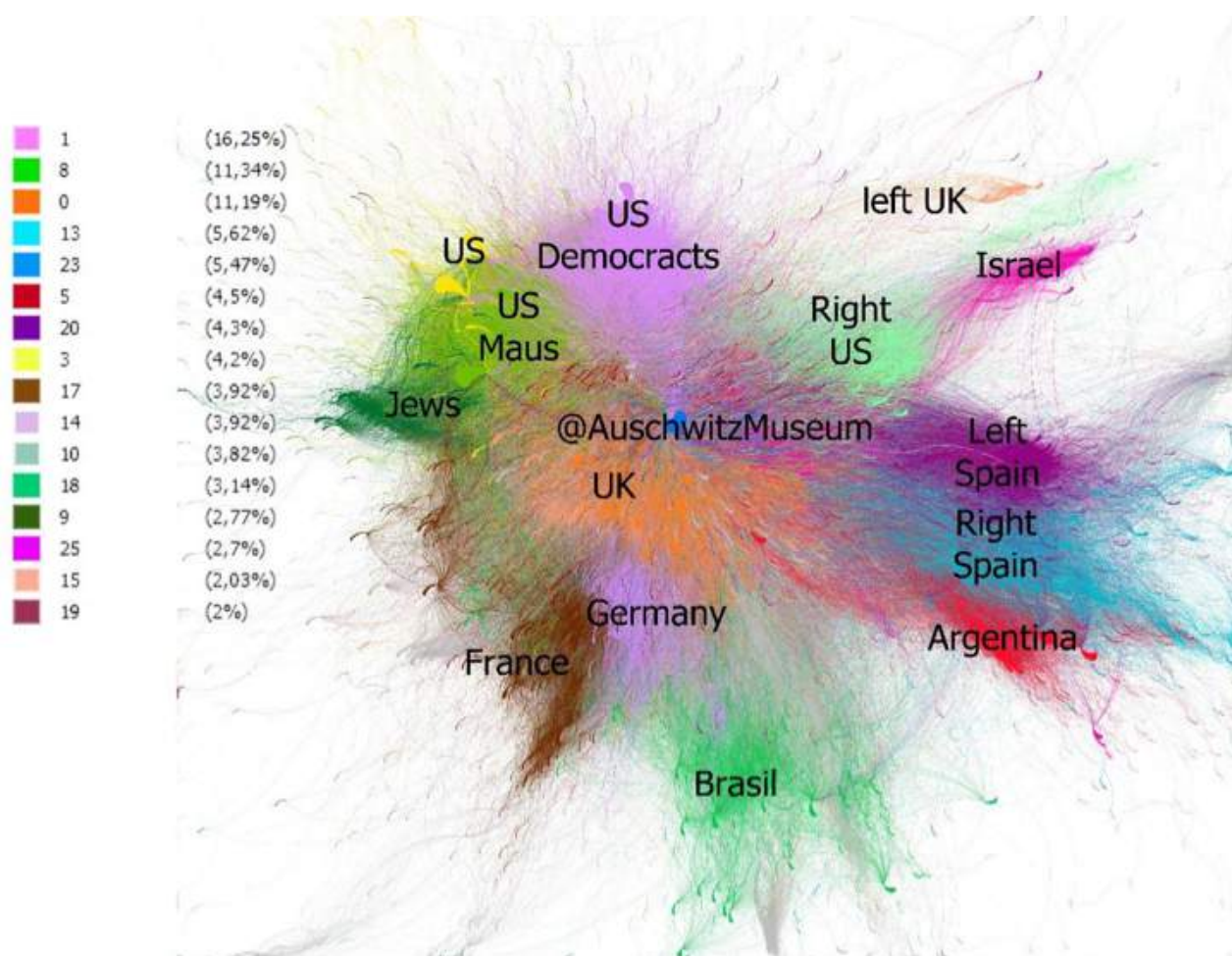
Table III. Words monitored.

Collection method	Streaming API
Collection period	25-01-2022 to 30-01-2022
Words searched	Holocaust #holocaust Holocausto #holocausto Holokauste #holokauste Holokaustoaren #holokaustoaren Shoah #Shoah Holokaust #holokaust Holocaust-Tag HolocaustTag יום השואה #holocaustday #WeRemember #memorialhistoricalday #HolocaustMemorialDay #holocaustremembrance #holocaustremembranceday #diaholocausto #díadelholocausto #Auschwitzherdenking #Auschwitz #Auschwitz75 #Auschwitz #AuschwitzLiberation

To begin the analysis of the communities identified in the 2022 commemoration, we must understand that, although Twitter is a global tool, the dissemination acts locally, and language is a barrier. Three factors are at work in the formation of communities in this case: territory, language and ideology. The groups are separated per territory and these in turn, in some cases, per ideology. Language brings the groups closer together, even if they have no political affinity. The structure of the graph (graph 1) shows four blocks: at the top are tweets originating from the United States, on the left European countries and on the right Spanish-speaking countries. In the centre are global institutions and NGOs and the UK. The United States, Spain and the UK are also separated according to ideology.

Graph 1.

Communities, International Holocaust Remembrance Day 2022



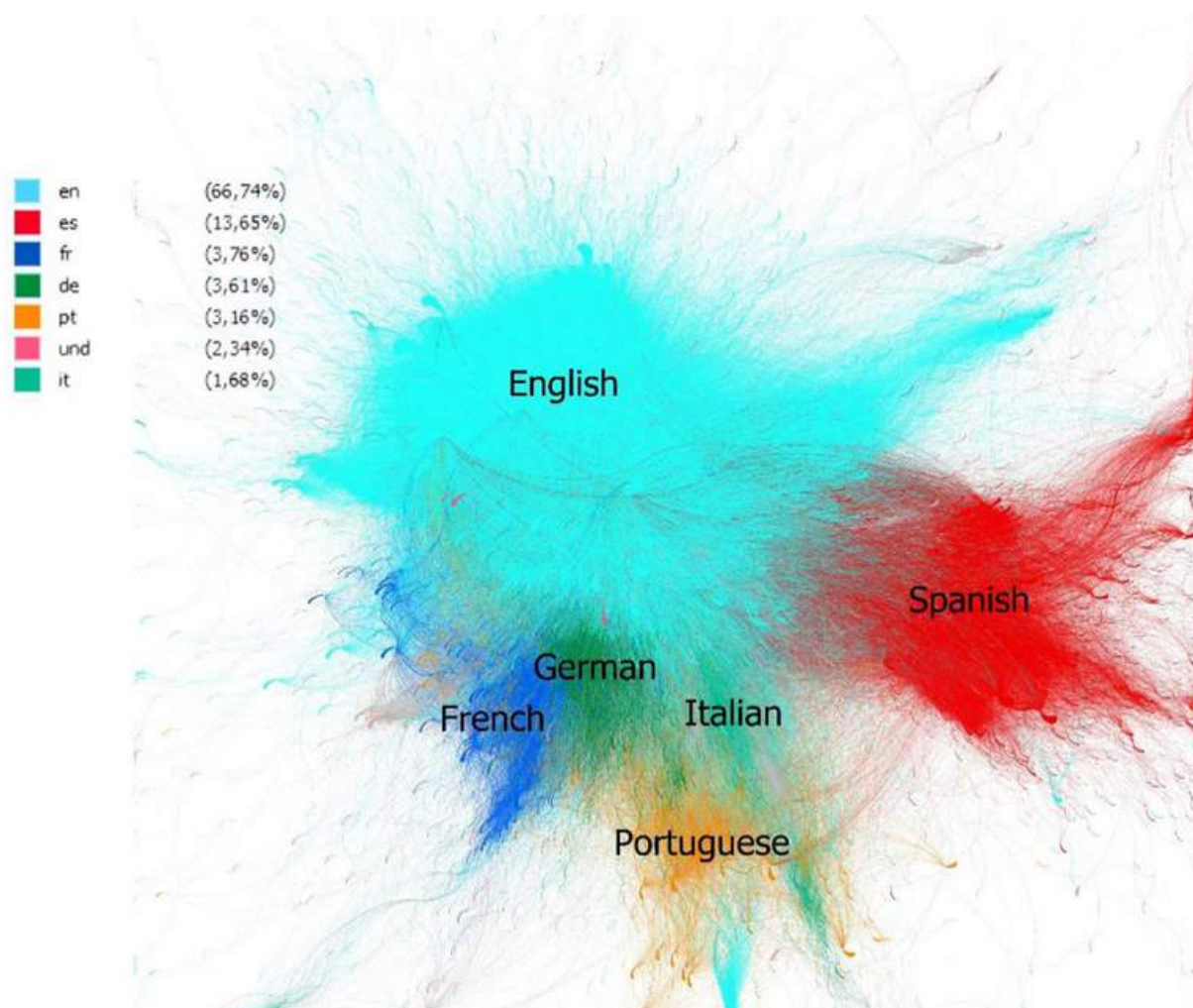
In a more in-depth analysis, three main communities stand out in terms of the percentage of their members. The largest, as in previous years, was that of the US Democrats (16.25%). This year, the controversy over the banning of the Holocaust comic book "Maus" in a Tennessee county sparked a reaction that generated a discussion group with 11.34% of the profiles. The UK, with a very central position in the conversation, was in third place, with 11.19% of users. This was followed by smaller communities such as the Spanish right (5.62%), the @auschwitzmuseum group (5.47%), Argentina (4.5%), and the Spanish left (4.4%). Compared to 2021, @auschwitzmuseum is less prominent, polarisation appears again in the UK, there is more presence of the Spanish right than the left and less activity among United States Republicans without the impulse of Donald Trump's followers.

The language distribution is shown in graph 2, and we can see that the most widespread language was English, followed by Spanish, French, German and Portuguese. The shape of the graph shows the abovementioned language barrier. English predominates in the upper and central part, Spanish in the lower right zone and French, German and Portuguese in the lower left zone. The language zones are not shown as disconnected parts. There are mixed connections, i.e. retransmissions of messages to a language other than the dominant one in the zone. English message retransmissions are observed from any language (visually, the light blue lines coming out of the different language zones).

Compared to 2021, tweets in English increased to 66.74% (61.17% in 2021), and in French to 3.75% (3.21% in 2021). There is a decrease in tweets in Spanish to 13.65% (14.05% in 2021), in German to 3.61% (4.35% in 2021) and in Portuguese to 3.16% (5.7% in 2021).

Graph 2.

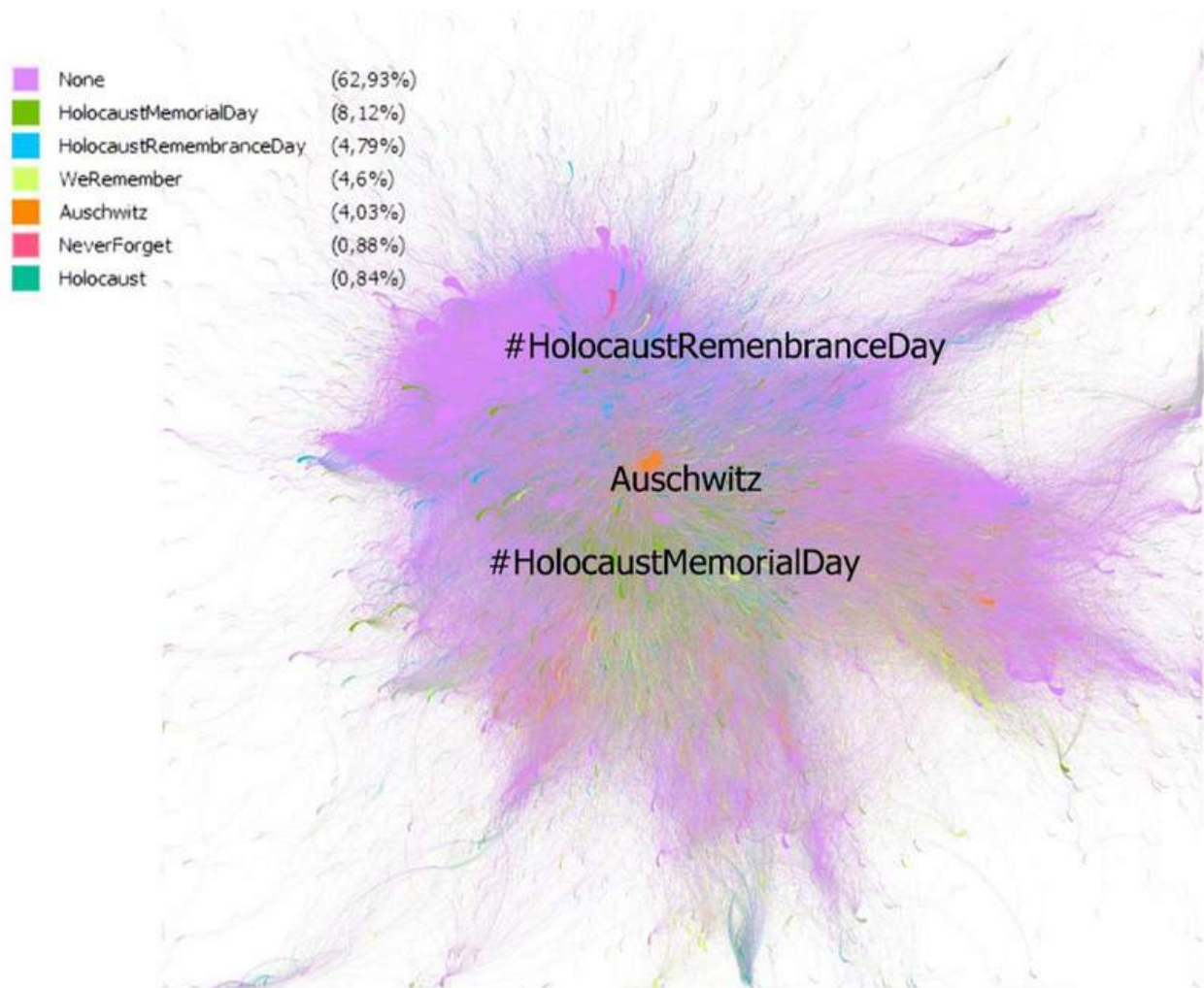
Communities per language.



Another of the elements we analysed are the tags used by the communities, especially because we consider the hashtag as the place of memory. Generally, the use of tags is carried out in organised campaigns that seek to give visibility to a topic or to users who want their message to be read when the tag is searched for. In this case only 37.07% of the messages shared included hashtags (52.1% in 2021). This indicates that almost two thirds posted messages that talked about the Holocaust without tags and that the search was done more by using keywords than tags. In this way, messages were able to reach those who retweeted them via their timeline or queries rather than by trending topics. Compared to 2021, the number of messages with hashtags decreased by 15.04%. The hashtags were established in some areas, especially in the Auschwitz Museum community and in the US and UK Democrat groups as can be seen in graph 3. The most popular were: #HolocaustMemorialDay (8.12%), #HolocaustRemembranceDay (4.79%), #WeRemember (4.6%), #Auschwitz (4.03%), #NeverForget (0.88%) and #Holocaust (0.84%).

Graph 3.

Most used tags.



An alternative view to the propagation represented by graphs is the time evolution of the publication of original tweets. In this study, original messages are considered to be those that imply that the author has generated their 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 modality is also called retweet with comment). In all three cases, it means that the author has typed a text that requires more effort than pressing a key to share it. On Twitter there is a lot of amplification, with the percentage of retweeted messages being above 80% in most of the topics analysed. In this case, the percentage of original messages (tweets, quotes and replies) is 18.87%, so the percentage of amplification is 81.12%.

The following graphs will analyse the evolution over time of the publication of messages, both original and retweeted. To begin, activity was concentrated on 27th January, slowly declining in the subsequent days. Figure 1 represents the temporal evolution of the publication of original tweets and the RTs they received, both counted in one-hour intervals. The two variables depicted have different scales, but are represented proportionally. The peak time was at 17:00 (GMT time), the same time as in 2021. During that hour, 14,226 tweets were posted (15,273 in 2021), which received 60,012 retweets (65,315 in 2021). At that time, European and American business hours coincide. The peak posting figures are very similar to the previous year, although slightly lower. However, this year there have been more original posts and RTs than in 2021, although they have been distributed differently.

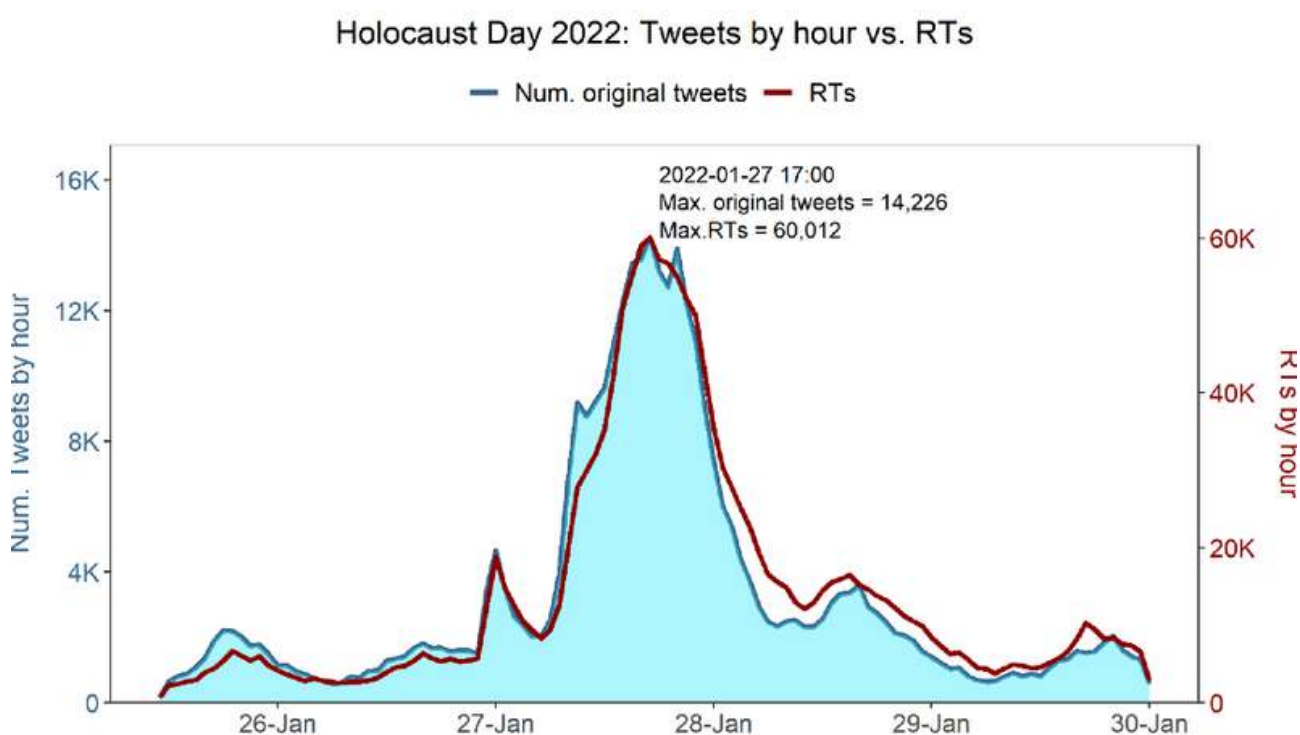


Fig. 1

Original Tweets vs. Retweets

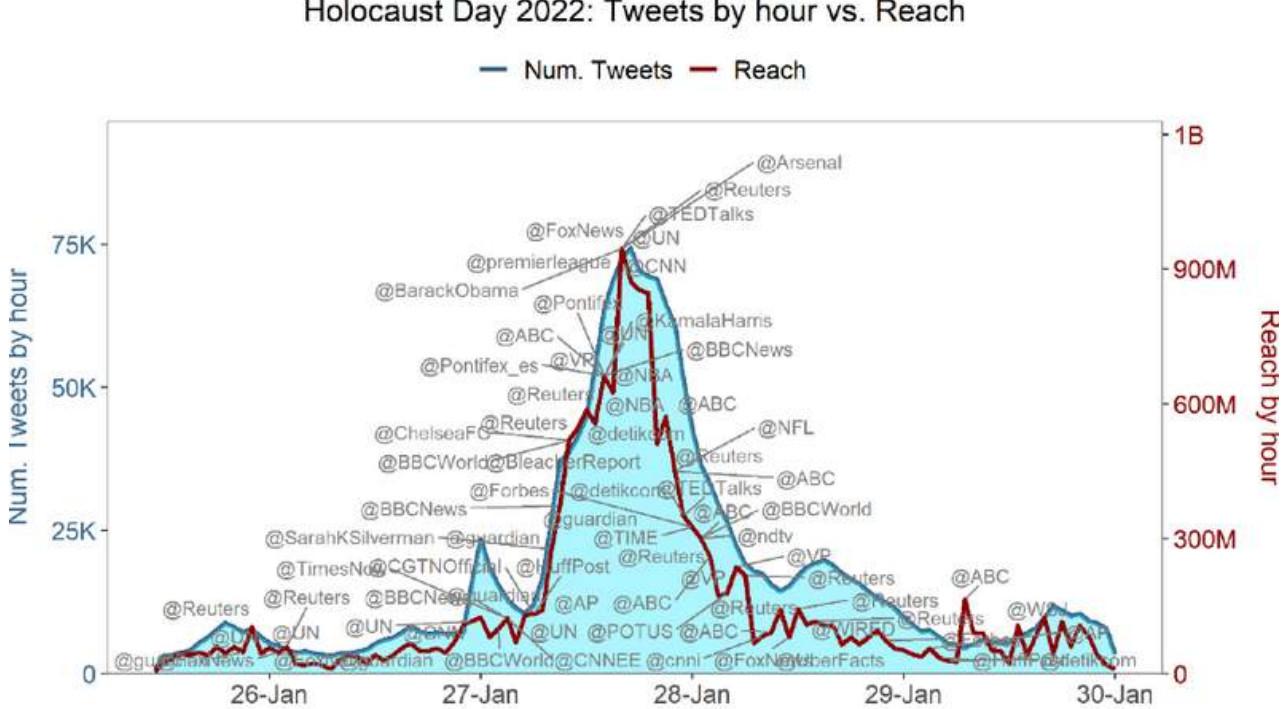


Fig. 2
Tweets vs. Reach

The participation of the different groups is shown in Figure 3 where the time differences of the countries can be seen. The American countries started their activity at 17:00 (GMT time). On the eve of the 27th, a group in the United States reacted to the banning of "Maus", a comic book about the Holocaust, in a county in Tennessee.

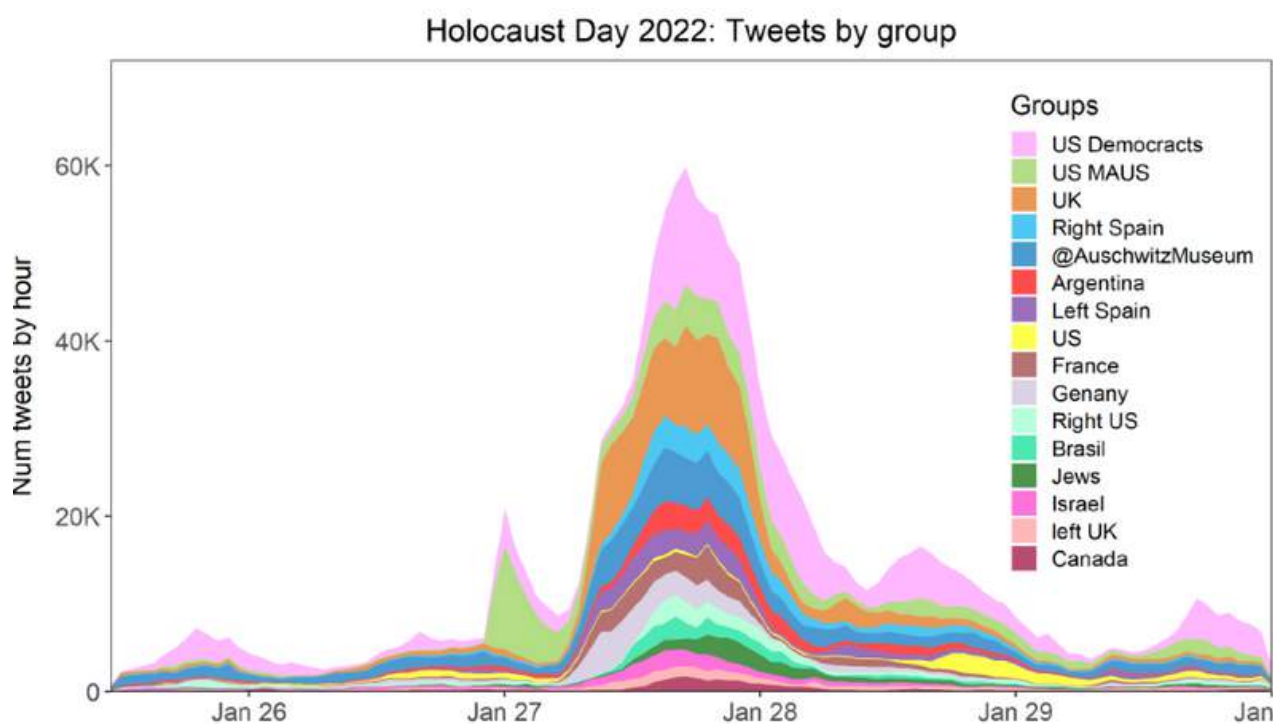
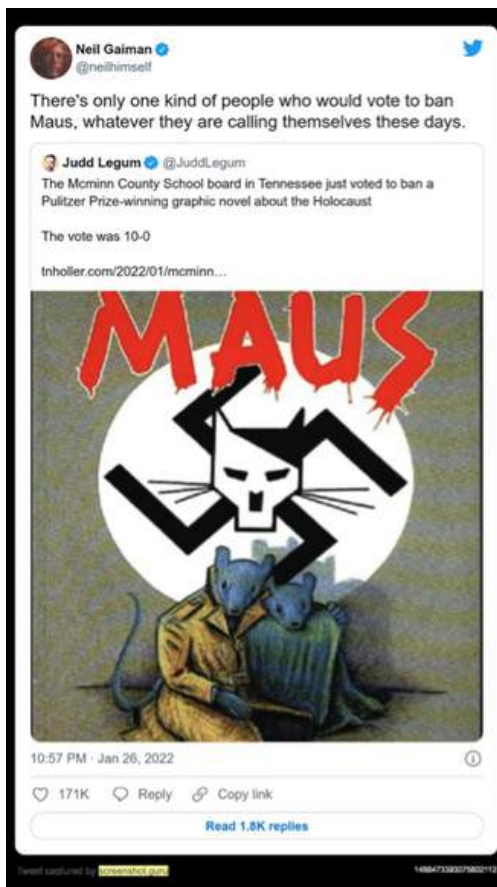


Fig. 3
Participation per groups

CONTENT ANALYSIS

The most popular messages are from a wide variety of authors: writers, journalists, ordinary people, politicians and institutions. Among the 10 most circulated messages, four of them refer to the banning of “Maus”, a comic book about the Holocaust, in a county in Tennessee. The rest are reminiscences or reflections. The three most popular tweets are attached below.



Certainly, the banning of the "Maus" comic generated thousands of tweets and was one of the most talked about topics of the day. So was the participation of politicians. From US Democrats to representatives of the British Parliament to Pope Francis himself.



The most widely disseminated messages were generally of an institutional nature and share, albeit with different language, the memory and condemnation of the Holocaust. However, there was also concern about the rise of anti-Semitism.

The most popular tweets in each community can be accessed at the following link:
europeanmemories.net/wp-content/uploads/2022/09/holocaust_day_2022_top-1.pdf



EUROPE DAY

Europe Day is one of the commemorations that is providing the most relevant results in the project [2]. In fact, we detected that, during the day, on Twitter, conflicting memories can be observed that are consistent with the European project itself, not in relation to its past, but in relation to its values and contradictions in the present. Beyond Europeanists and Eurosceptics, the narratives we detected are much more complex, and warn us of a growing multifaceted and multidirectional questioning. In 2022, the Ukrainian war undoubtedly had an obvious central focus, although, as we shall see, instrumentalised by pre-existing narratives.

Table I. Evolution of participation.

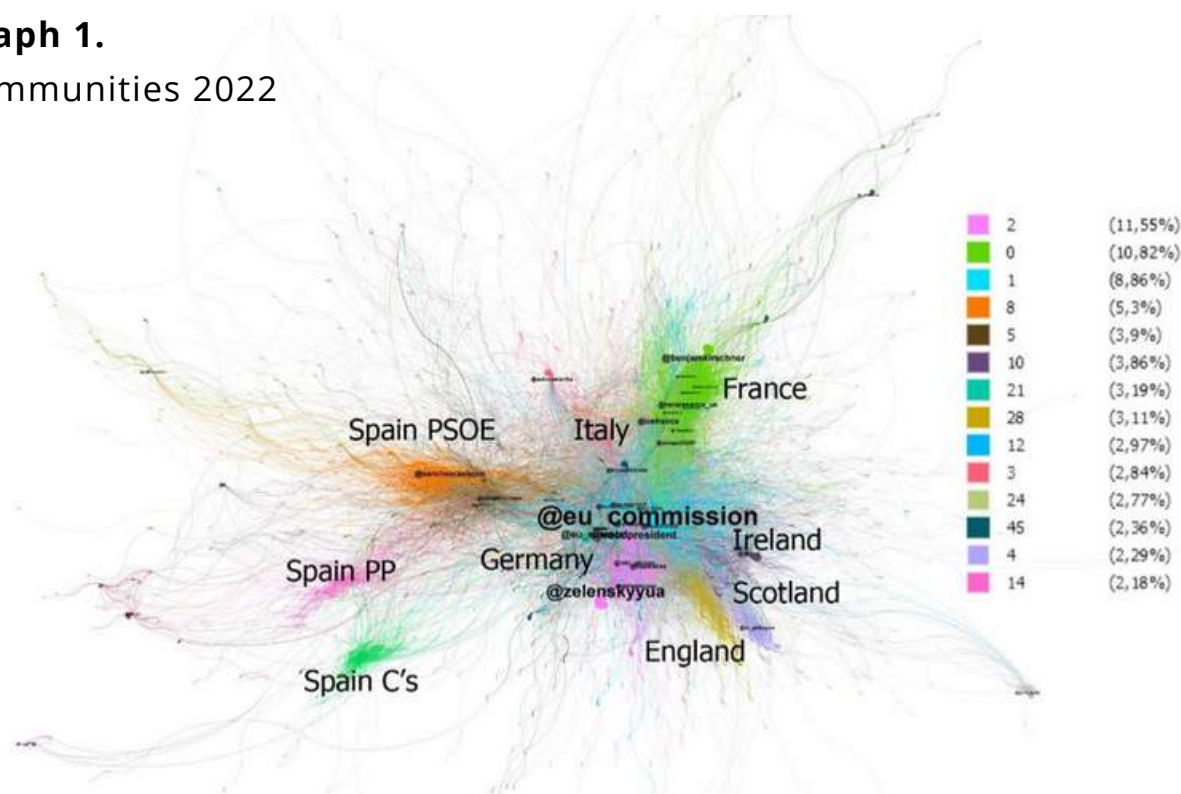
Year	Original Tweets	Tweets + RTS	%RTS	Unique users
2019	24,222	114,447	78.83%	42,784
2020	44,929	218,149	79.40%	100,163
2021	21,085	114,531	81.59%	54,479
2022	18,501	118,818	84.42%	59,126

[2] A specific article about this day was published in the magazine *Observing Memories*:

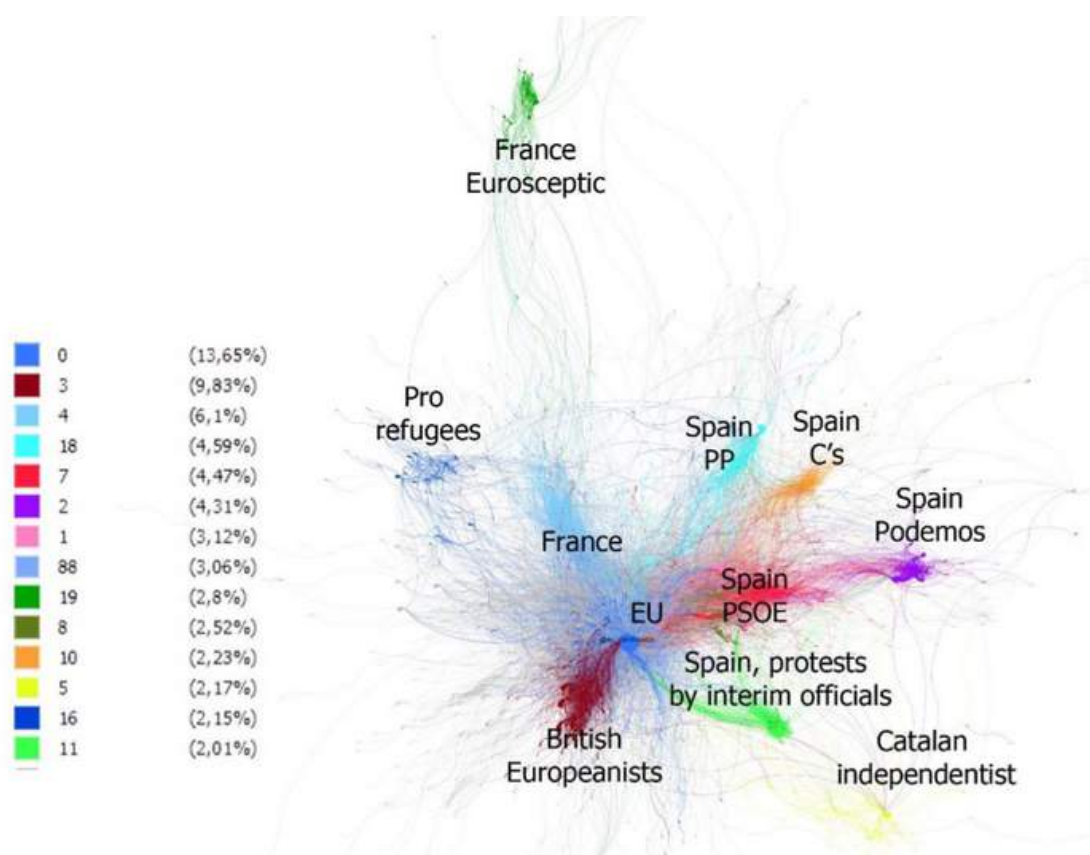
<https://europeanmemories.net/magazine/online-memories-the-battle-over-online-memory-on-europe-day/>

However, this support for the commemoration must be nuanced according to territorial and ideological criteria, across communities. Dissemination in 2022 was very dispersed, with 34% of the profiles belonging to isolated groups or groups containing less than 2% of the participants. Within the analysed graph, the communities are also highly fragmented, with the largest being that formed around Ukrainian President Volodymyr Zelensky with 11.55% of the profiles, followed by France with 10.2%. The rest of the groups have less than 10% of users (graph 1).

Graph 1.
Communities 2022



Graph 2.
Communities 2021

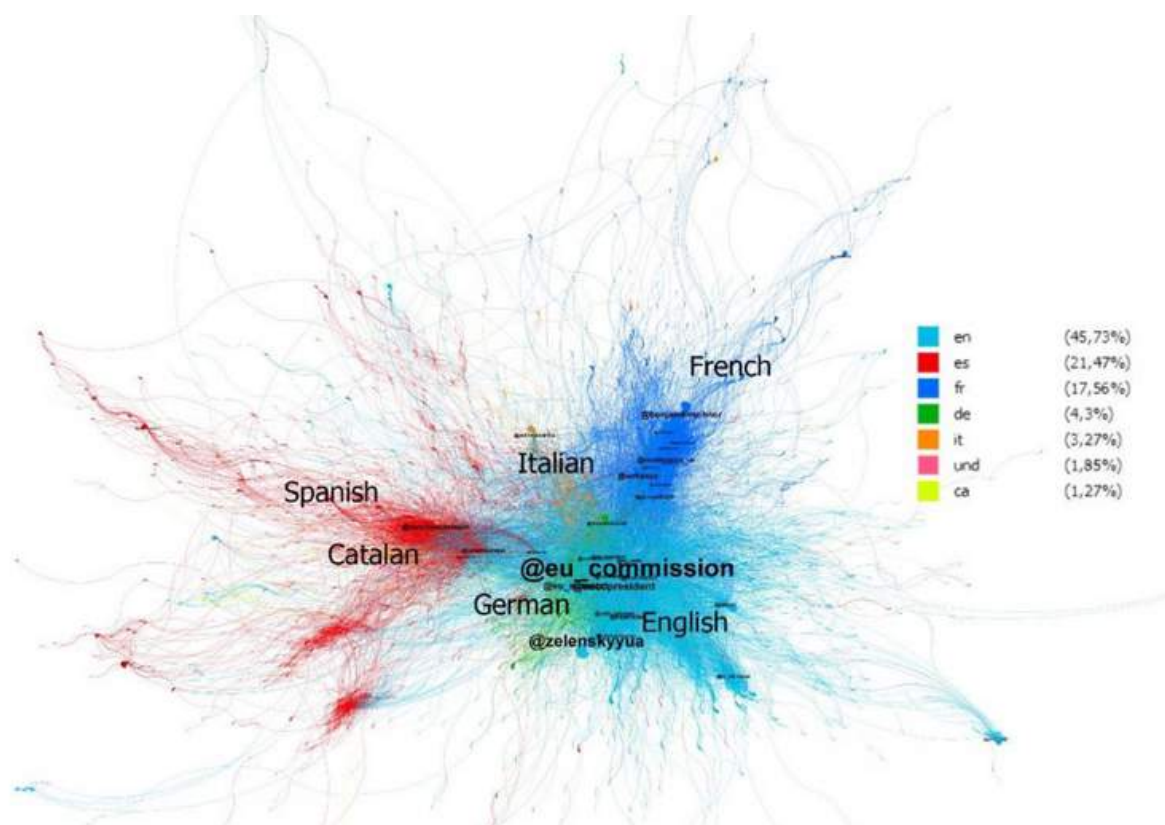


As in previous years, the graph shows a central area with the European Commission and several branches corresponding to EU countries. In 2021 (graph 2) a group of British pro-Europeans appeared with 9.93% of profiles, while in 2022 this group is separated into Ireland, England and Scotland, adding up to 9.26% of users - a separation that we can perhaps interpret through a greater rise in independence movements after Brexit, the new referendum petition in Scotland and the electoral victory of Sinn Féin in Ireland. It is worth noting the participation of Spain and the structuring of the dissemination according to political parties: PSOE (5.3%), Partido Popular (2.18%), Ciudadanos (1.54%). The separation between right and left is clear. In 2021 in France there is a separation between Europeanists (6.1%) and Eurosceptics (2.8%), while in 2022 only one group from France has been detected with 10.82% of the profiles. The presence of Italy was 2.84% and Germany was 2.36%. In 2021 they did not reach 2% of users. In short, the graphs for 2021 and 2022 have changed significantly, although some trends are maintained in communities such as Spain and the UK.

In the distribution of language (graph 3), English predominated at 45.73% (44.28% in 2021), being used by British Europeanists and the groups closest to the European Commission. The second language used was Spanish, at 21.47% (26.58% in 2021), used by all Spanish political parties - except the Catalan ones. The third language was French, at 17.56% (11.74% in 2021), the fourth was German, at 4.3% (4.5% in 2021) and the fifth was Italian, at 3.27% (2.89% in 2021). Catalan was present in 1.27% of the messages (2.69% in 2021). Therefore, in 2022 the use of English and French increases, while the rest of the languages decline.

Graph. 3

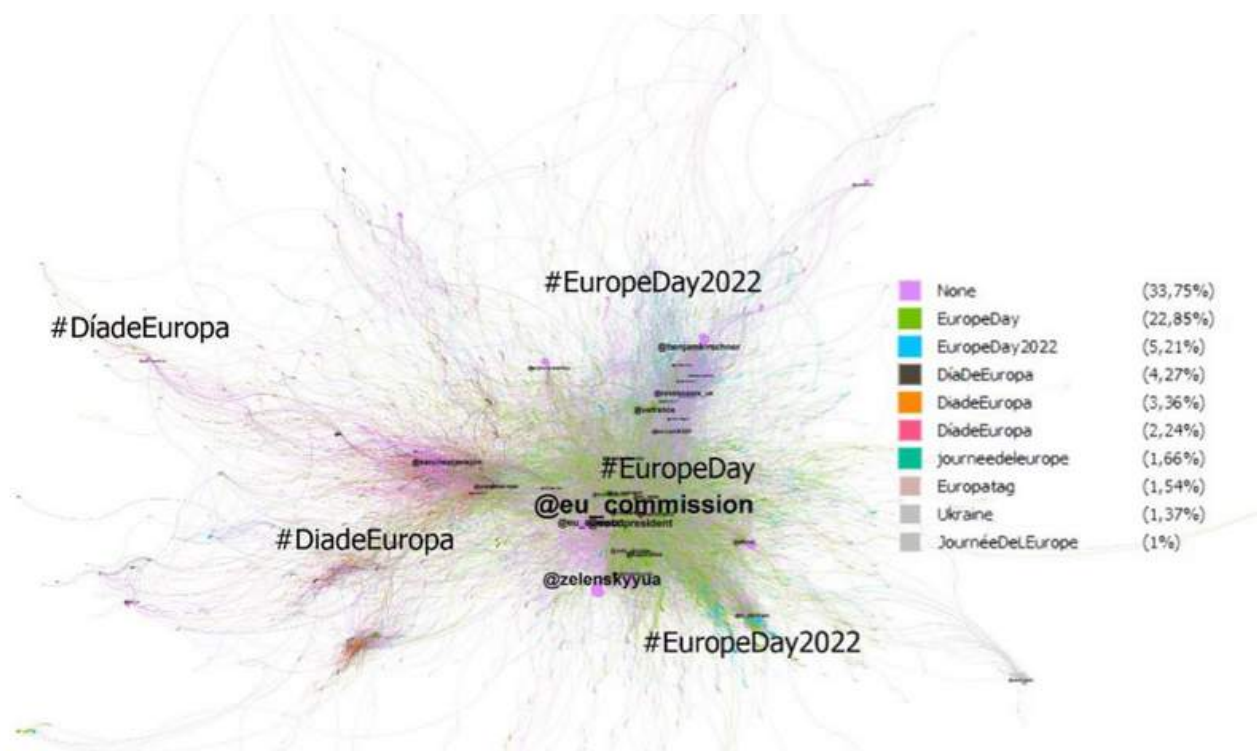
RTs per language



Likewise, most of the tweets included hashtags (graph 4), a consequence of the search carried out. We recall that this question is of particular interest to us, because although there is a lot of dissemination outside the tags, they allow us to generate a memory space, and to create an online archive. In fact, despite the fact that the search terms were only hashtags (table 2), Twitter provided 33.75% of messages without hashtags. The most frequent hashtag was #EuropeDay present in 22.85% of tweets (25.59% in 2021). In Spain, the most used tags were divided by whether or not the word "Día" (Day) had an accent. The accented #DíaDeEuropa (4.27%) prevailed over the unaccented #DiaDeEuropa (3.36%). In France #JourneeDelEurope with 1.66% (2.01% in 2020) and in Germany #Europatag 1.54% (2% in 2020).

Graph. 4

RTs per hashtags

**Table 2.**

Hashtags searched

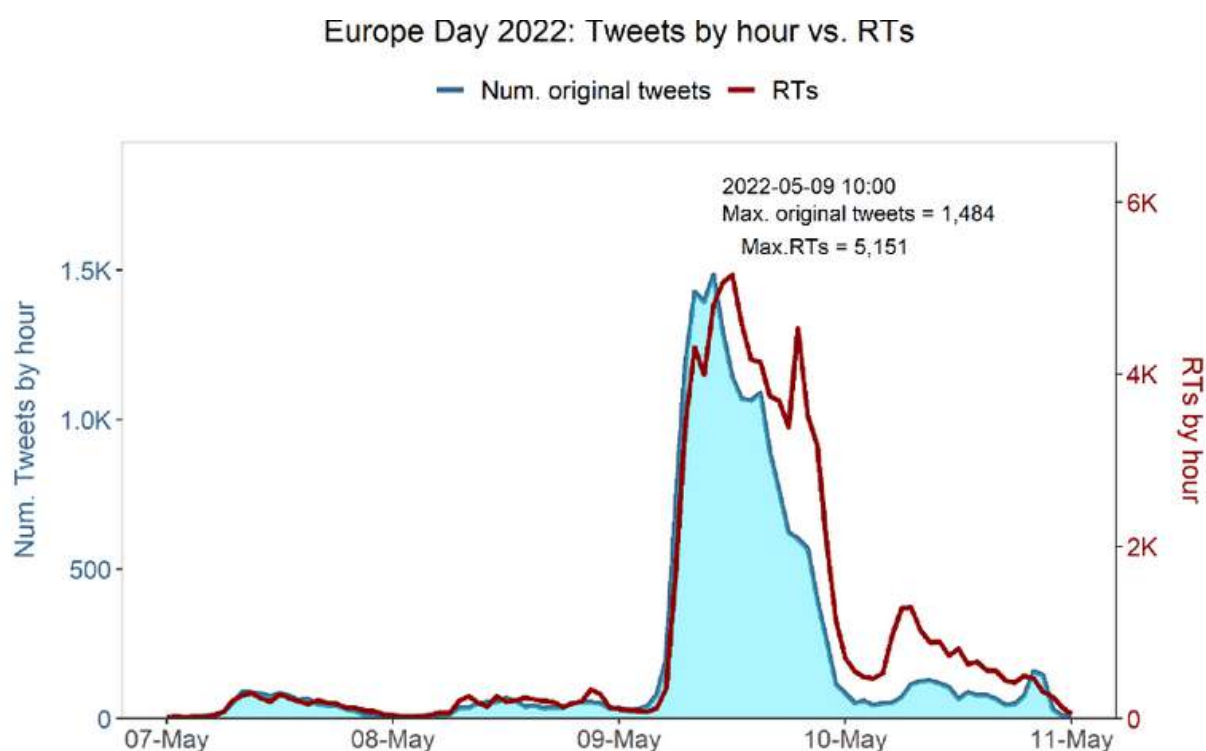
Words searched

#DiaDe Europa | #DíaDeEuropa |
 #DiadEuropa2022 | #9DeMayoDíaDeEuropa |
 #FelizDíaDeEuropa | #EuropeDay2022 |
 #Europatag | #diadaeuropa | #fetedeleurope |
 #JourneeDelEurope

Note: the search for “Día de Europa” or “Europe day” was not included, to avoid false positives. A search for the date 9th May was not carried out either because Victory Day is celebrated in Moscow on that date.]

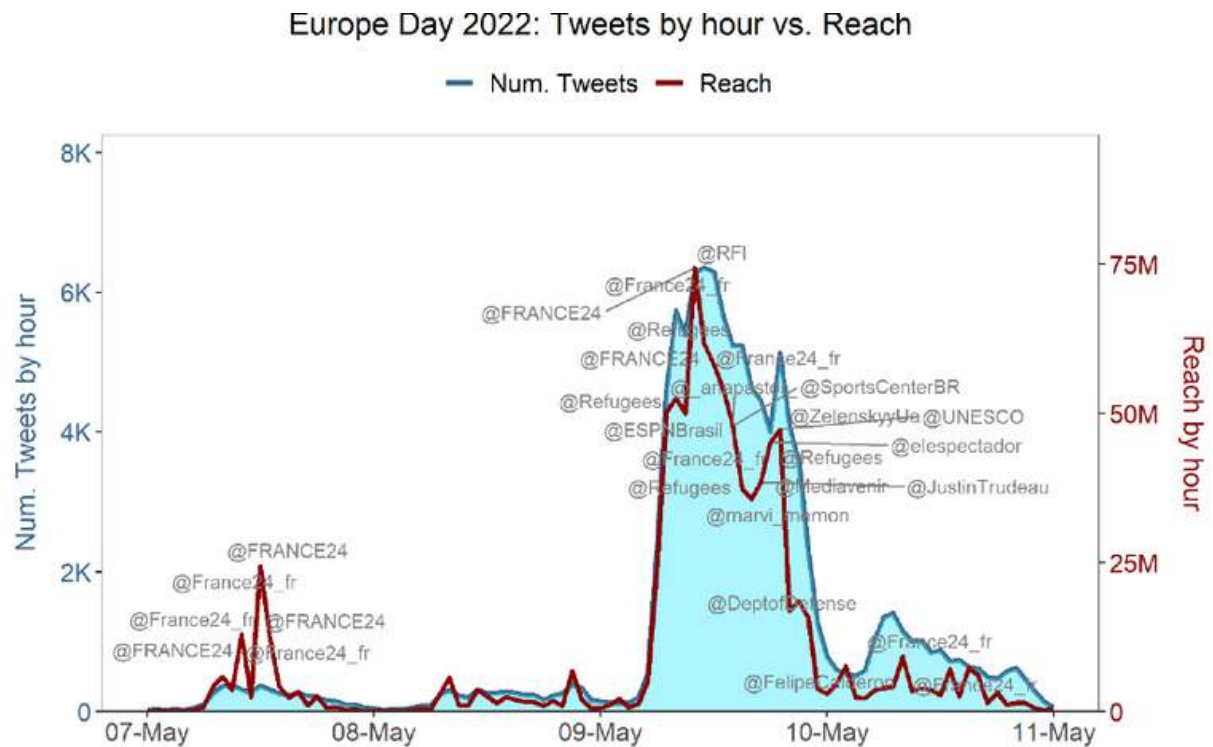
An alternative view to graphs and communities is the temporal evolution of the publication of original tweets. We recall that in this study, original messages are considered to be those that imply that the author has generated their own message. On Twitter, there is a considerable amount of amplification, with the percentage of retweeted messages being above 80% in most of the topics analysed. In this case, the percentage of original messages (tweets, quotes and replies) is 15.58%, so the percentage of amplification is 84.42%.

As usual, the intensity was lower on the days before and after the day of the celebration. The bulk of tweets were concentrated on 9th May. Graph 1 shows the relationship between tweets published and RTs received in one-hour intervals. It is a graph with two scales: tweets from 0 to 1,484 (in 2021 it was from 0 to 1,887) and retweets from 0 to 5,151 (in 2020 it was from 0 to 6,390).



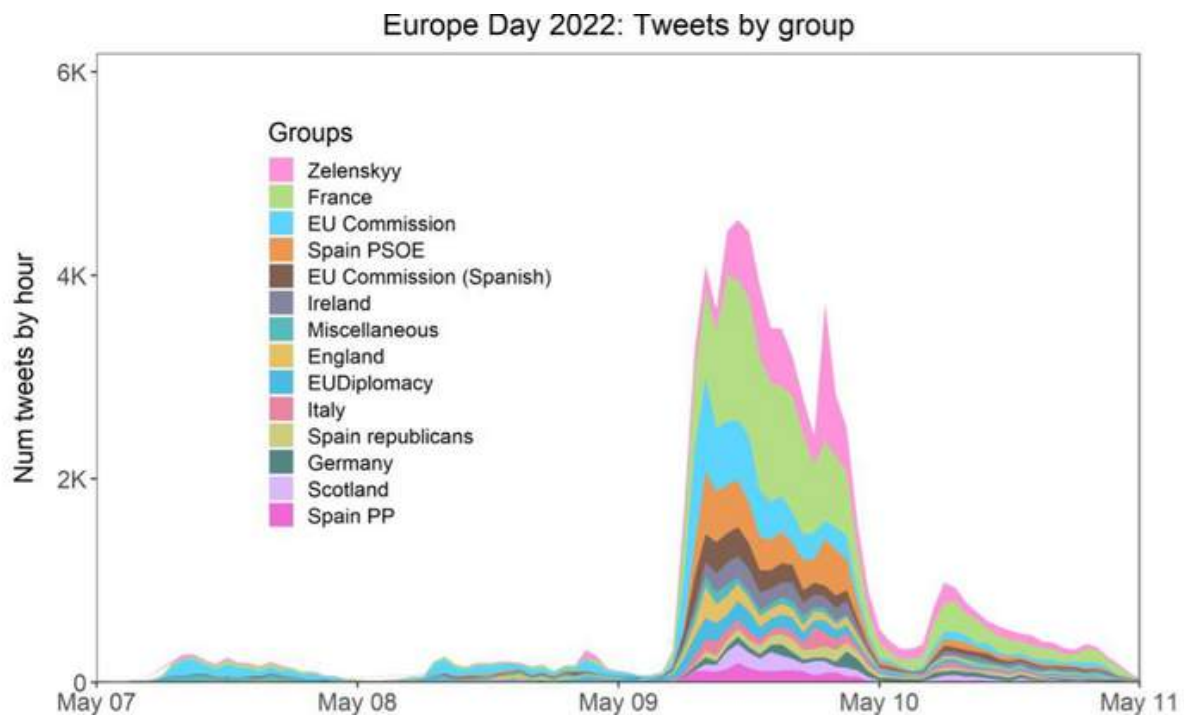
Graph 1.
Tweets vs. Retweets

The participation of relevant profiles is reflected in graph 2, which shows the profiles with more than 2 million followers that participated. Most of them were institutions, politicians and media. Therefore, we continue to detect that on social media, the promotion of public holidays continues to belong to this sphere and is little considered by the general public.

**Graph 2.**

Participation vs. Reach

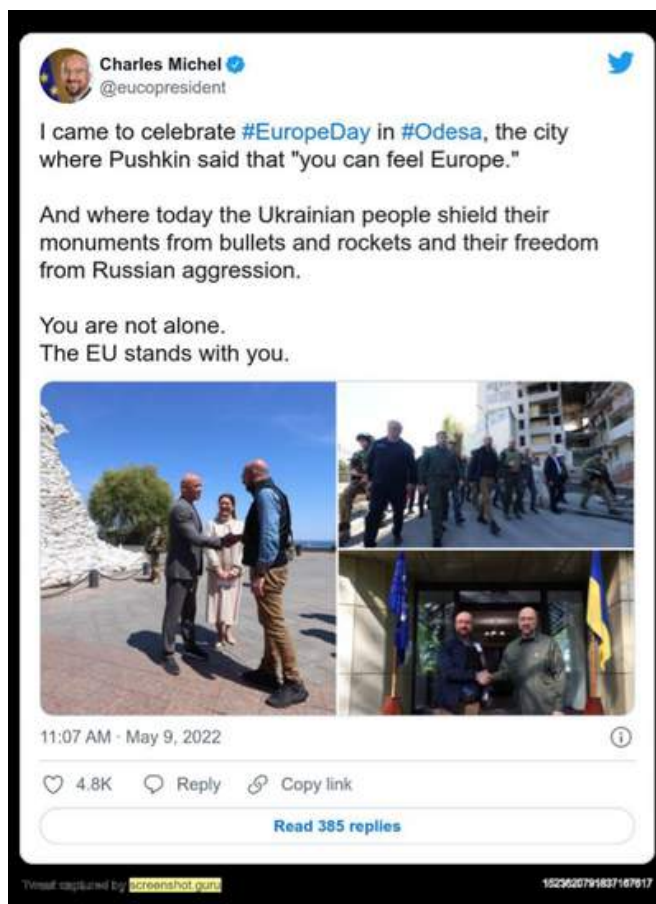
The participation of the different groups is shown in Figure 7, which shows European times (peak time at 9:00 GMT), with little presence from America.

**Graph 3.**

Tweets per group

CONTENT ANALYSIS

The most popular message is from Ukraine's President Volodymyr Zelenskyy and refers to the defence of European values, as part of the country's strategy to move closer to the EU and to join the Union. In fact, 6 of the 10 most popular messages of the day are related to the Ukrainian war and within the community generated around Zelenskyy there are many messages from MEPs (see the final link).





Also noteworthy are the messages from European institutions highlighting peace, also clearly referring to the context.



In the analysis of the tweets from the French community, there is a notable absence of Eurosceptic content, which in previous years had been very prominent, with pro-European and pro-Ukrainian messages in the top positions (see the final link).



Ireland, order: 1



The messages of the Spanish communities were in a similar vein, institutional in nature, with a strong presence of the official accounts of the European Parliament, and also with numerous allusions to Ukraine. The Irish community, on the contrary, presented a different discourse from the general dynamic, with an important presence of the pro-independence political agenda.



Among the communities of Spanish Republicans, some notable tweets remember, in contrast to Europe Day, Victory Day celebrated in Russia. It is apparently the only community where this issue had some relevance.

To see all the relevant tweets from each community, see the list:

europeanmemories.net/wp-content/uploads/2022/09/europe_day_2022_top-1.pdf



SECOND SPANISH REPUBLIC DAY

In addition to being the day of the proclamation of the Second Republic, 14th April also marks Pan American Day. For this reason, messages from both commemorations are intermingled. In previous reports, the total number of tweets was collected, but this year they have been separated per type of celebration - to be more consistent with the results of the disseminations and to avoid mixing content. The evolution of Twitter activity on 14th April peaked in 2020. In 2022 there has been less participation than in the previous year, although the percentage of participation per ideological groups in Spain has not varied much (Table 1).

Table 1. Evolution of participation.

Year	Original Tweets	Tweets + RTS	%RTS	Unique users
2019	11,180	114,447	78.83%	42,784
2020	36,296	218,149	79.40%	100,163
2021	30,728	114,531	81.59%	54,479
2022	Total: 14,996 Spain: 13,135	Totals 92,556 Spain: 59,220	Totals: 83.8%. Spain: 77.82%.	Totals: 41,515 Spain: 25,597

In 2022, the percentage of RTs compared to original tweets decreased with respect to 2022, by 0.61 points, and the percentage of users decreased to 51.53%. Having separated the data per type of event for the first time this year, the amount of variation in Spain compared to previous years cannot be estimated, although we can state that with this separation the analysis is somewhat more precise.

The following table (2) shows the words selected for each of the years. In 2020 it was extended to variations of the hashtag #14deAbril and direct references to the republic were removed to avoid false positives. In 2022, the same search as in 2020 was maintained but 57.22% fewer tweets were collected.

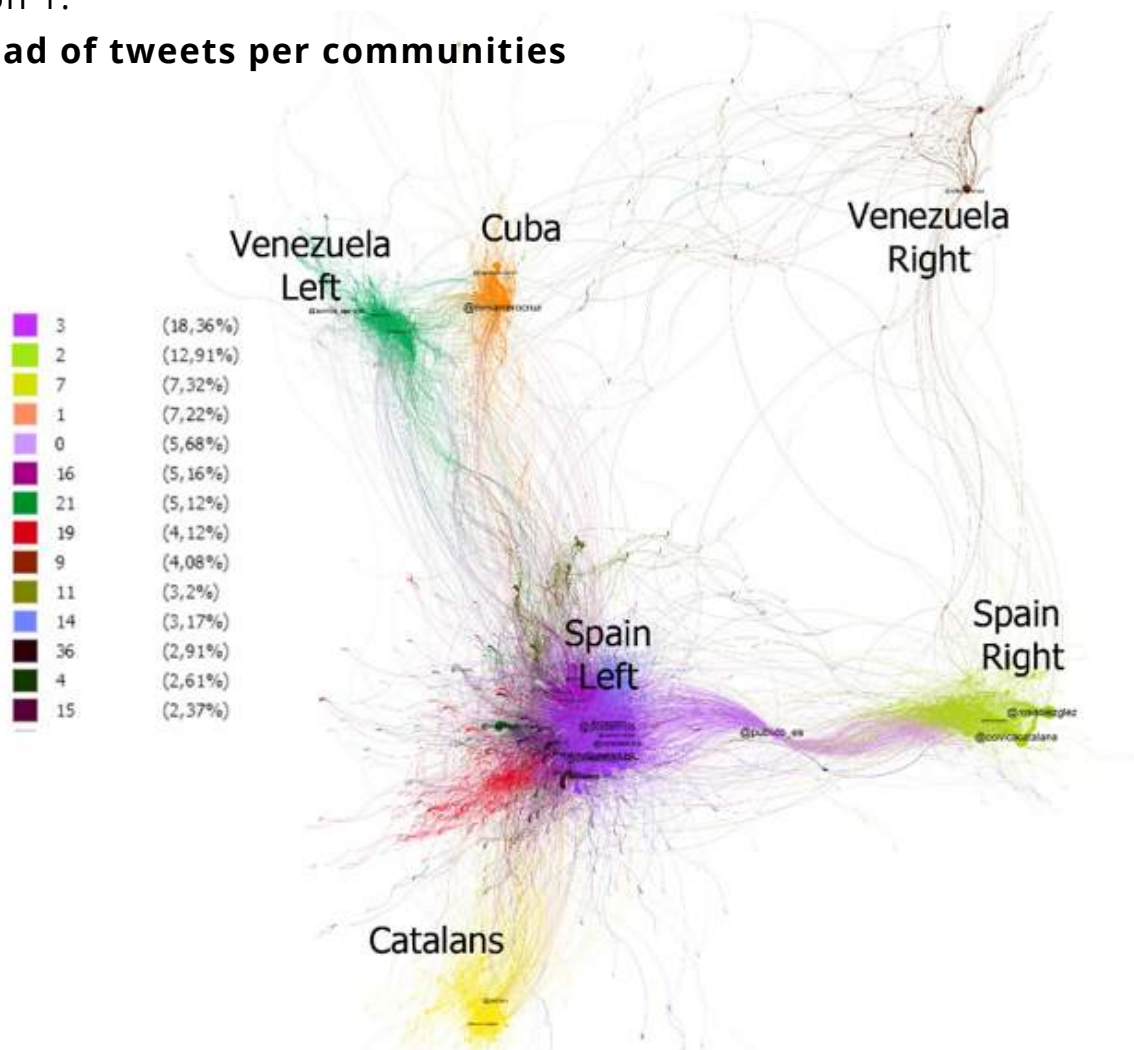
Table 2.
Words monitored

2019	2020	2021	2022
#14deAbril #VivaLaRepública #IIRepública Segunda república	#14abril #14deabril #14AbrilRepublicaYa 14 abril república 14 abril republica subcampeones 1939	Idem 2020	Idem 2020

As we have noticed, the structure of the communities is similar to previous years, forming a square in which each of the blocks is located at a vertex - something unusual and which indicates that these communities are rather more static and faithful to the commemoration, probably also influenced by the fact that this celebration does not have institutional support. The resulting graph (graph 1) shows four zones associated with ideology and geography. Due to the fact that Pan American Day is also commemorated on 14th April, two Latin American blocks appear, one right-wing and the other left-wing. The other two blocks correspond to Spanish profiles that posted tweets on the commemoration of the Second Republic, also divided into left-wing and right-wing ideology. Compared to the previous year (graph 2), the Latin American left-wing block is divided into two groups, one Venezuelan and the other Cuban, while the right-wing block is less connected. There are connections between Latin America and Spain by ideology, more so in the left-wing positions. These country-ideology connections indicate that a small group could be talking about both celebrations.

Graph 1.

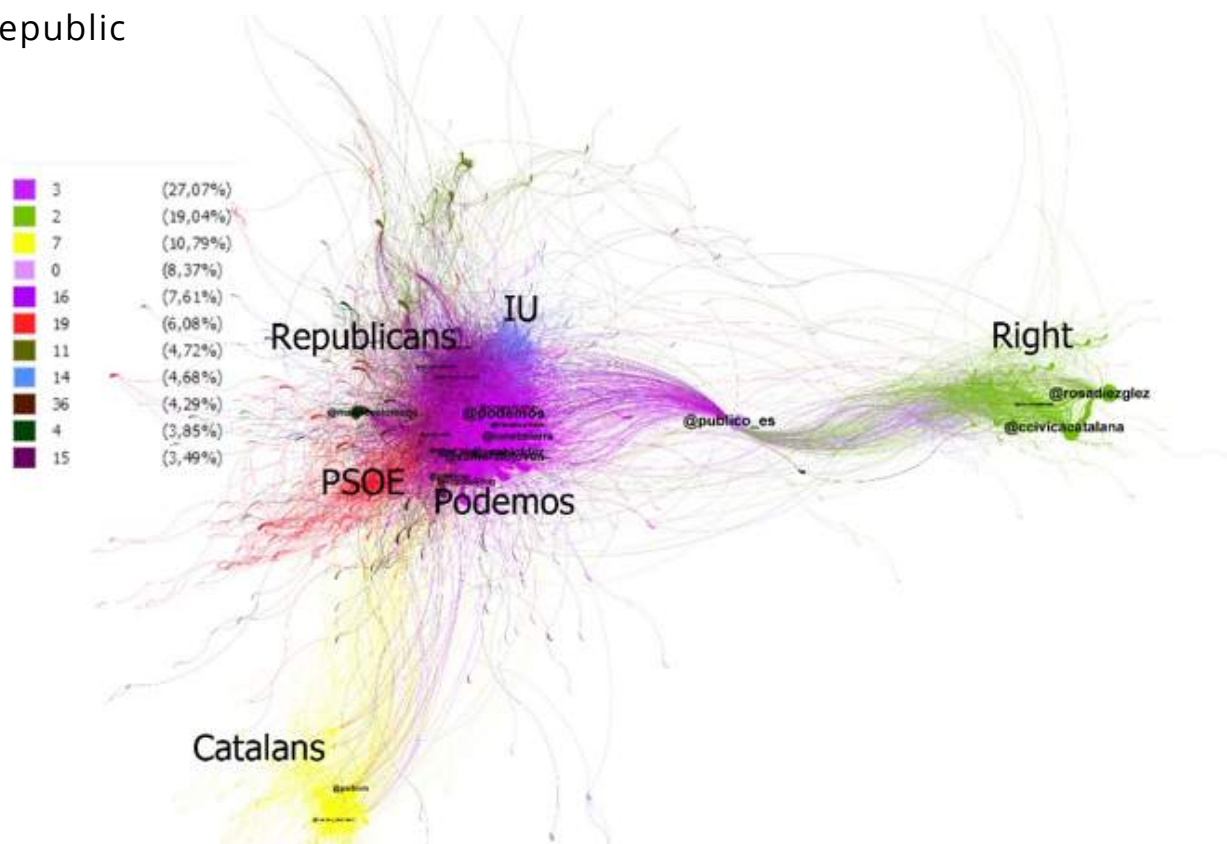
Spread of tweets per communities



As in the previous year, in order to limit the context to the dissemination of tweets related to the Second Republic, the Venezuela and Cuba groups have been removed. The resulting structure, which is the definitive graph, is separated into two blocks, for and against the commemoration (graph 2). On the one hand, in a single group, the right-wing appears in green, with 19.04% of the participants, representing the opposing positions. Their participation has risen by 3.45 compared to 2021 (15.59%) and is almost the same as in 2020 (19.25%). In the 14th April 2022 celebration, therefore, the stronger presence of the left-wing parties against the right-wing continues.

Graph 2.

Dissemination per communities limited to the Second Spanish Republic



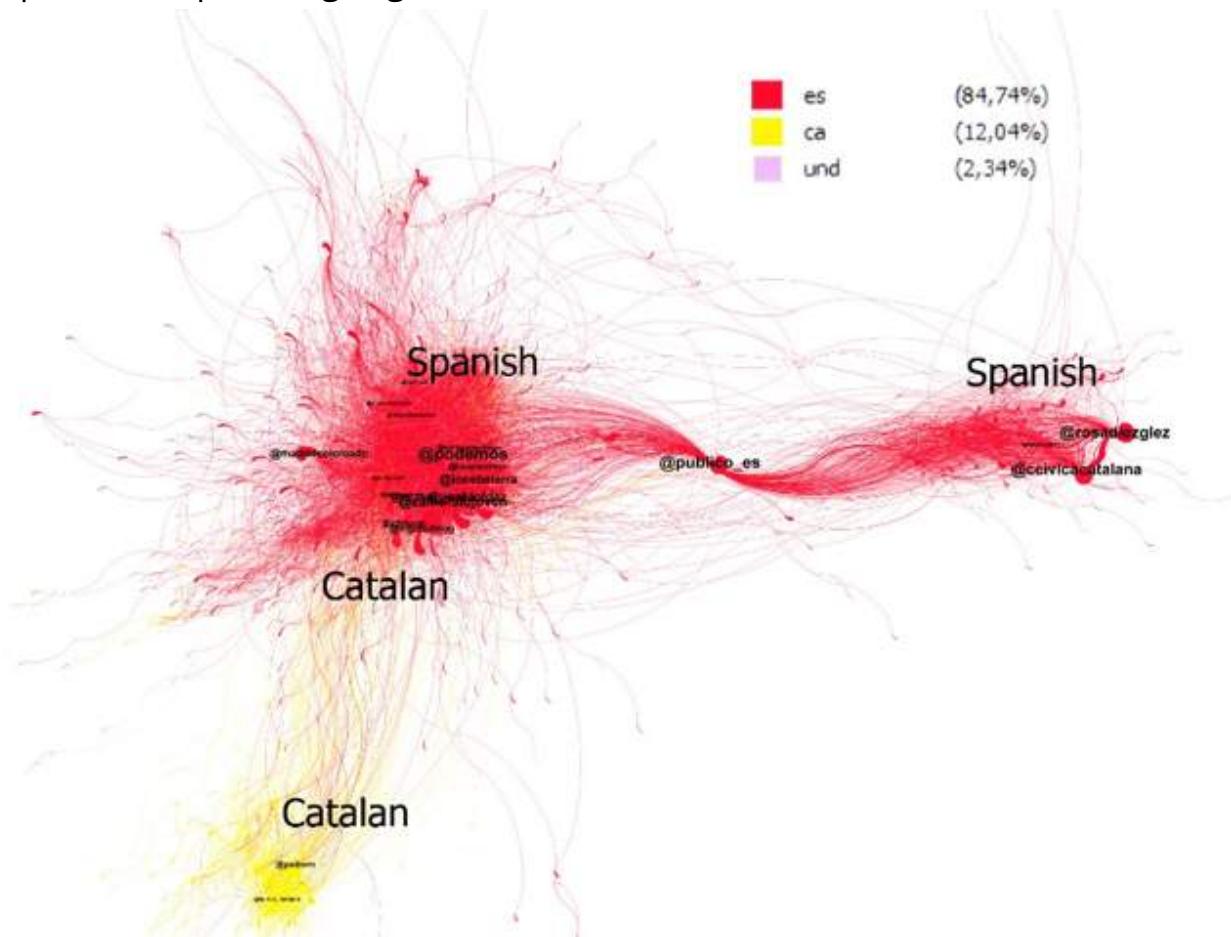
The block in favour of the celebration of the Second Republic is a mixture of republican groups, close to political groups such as Podemos, PSOE, Catalan users and profiles of users who support the commemoration. In this block, the largest group is that of Podemos sympathisers, with 27.07% of profiles. The previous year they comprised 23.77%, so an increase of 3.3 points can be observed. PSOE supporters decreased slightly in participation (6.08% in 2022, 6.59% in 2021 - 2.35% in 2020) and the Catalan group increased by 2.80 points (10.79% in 2022, 7.97% in 2021 - 3.52% in 2020).

In general, the structure of connections was very similar to that of 2020 and 2021, except for the Catalan group, which seems less connected to the other left-wing groups and more peripheral. This separation of the Catalan group may be due to the fact that it focused more on the speech that Macià made on 14th April 1931 proclaiming the republic. Moreover, as a specificity, this year we should mention that the newspaper Público published a poll on monarchy or republic that was followed by both blocks, placing it in very central positions.

The language distribution (graph 3) was mostly in Spanish (84.74%), down 1.96 points compared to 2021 (86.7%). Catalan represented 12.04%, an increase of 6.14 points compared to 2021 (5.9%). The rest of the languages had an insignificant percentage.

Graph 3.

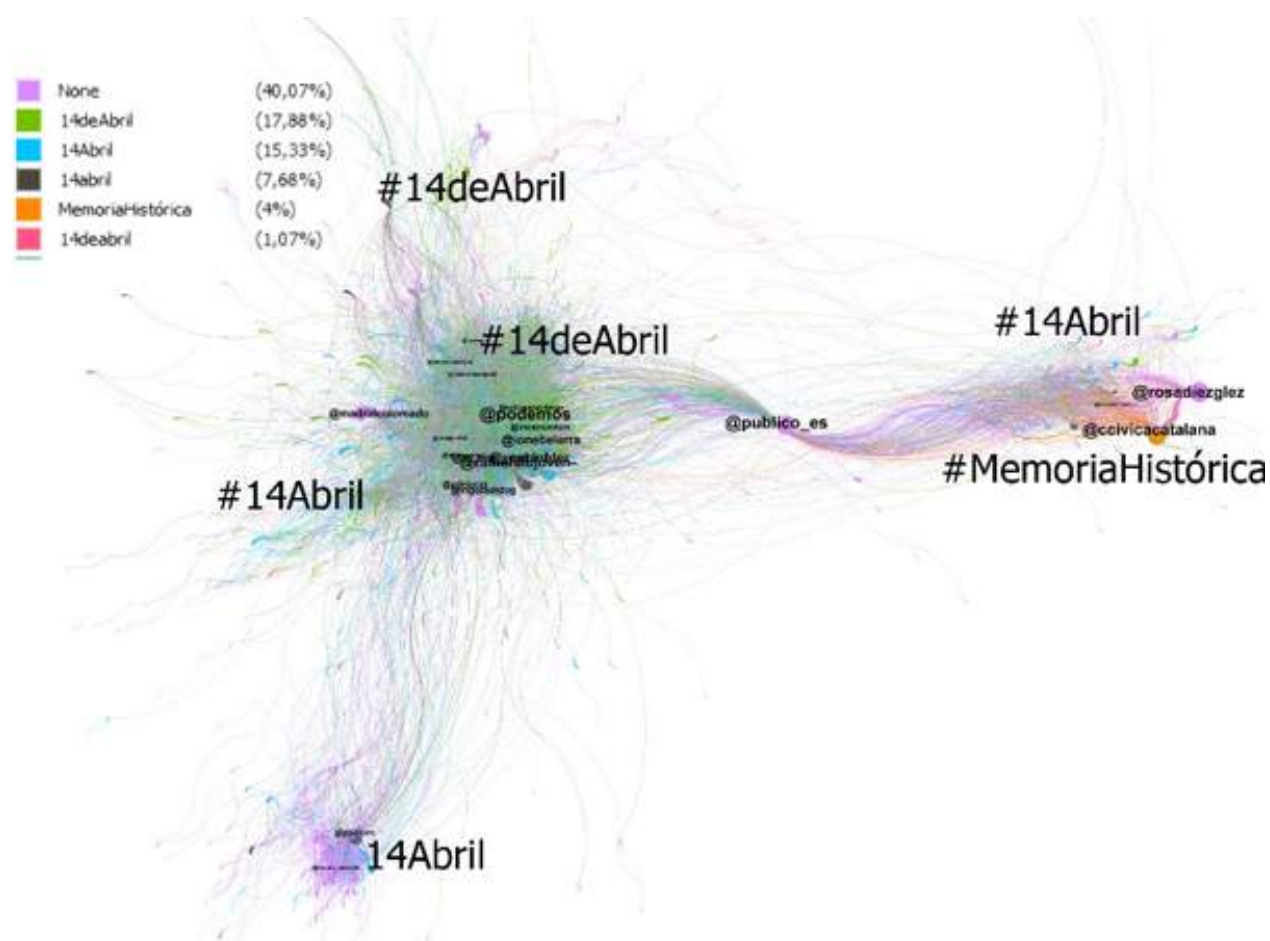
Graph of RTs per language



More than half of the tweets included hashtags (graph 4), a consequence of the search performed. 40.07% did not contain hashtags, corresponding to the search for "14 abril república". The most popular hashtags were #14deAbril (17.88%), which was used by the block in favour of the Second Republic. The second most used hashtag was #14Abril (15.33%), appearing in all the blocks. In the right-wing group, the hashtag #MemoriaHistórica appears, which corresponds to a widely circulated tweet by Convivencia Cívica Catalana – a conservative anti-independence group with extreme right-wing representatives.

Graph 4.

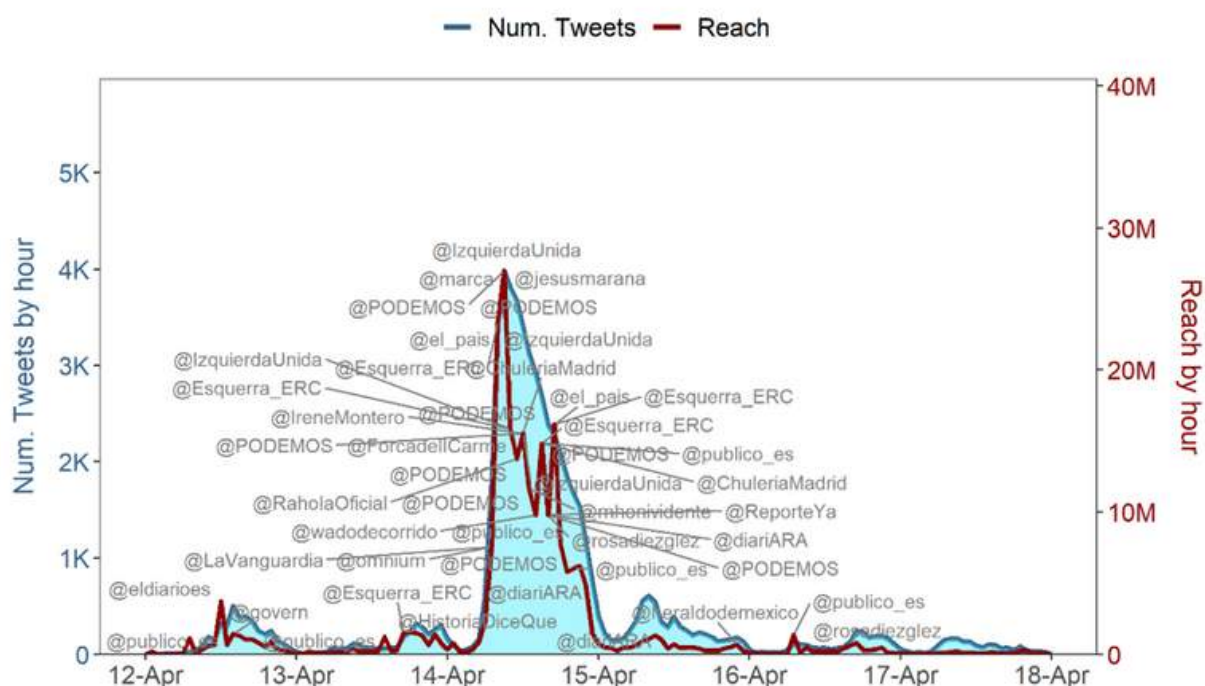
Distribution per hashtag



The analysis of the temporal spread has been carried out only with the tweets collected from the groups in Spain. Messages from groups 1, 21 and 9 of Venezuelan and Cuban origin that corresponded to the celebration of Pan American Day have been removed.

As usual, the intensity was lower on the days before and after the day of the celebration. The bulk of tweets were concentrated on 14th April. Figure 1 shows the relationship between tweets published and RTs received in one-hour intervals. It shows a considerable decrease in the publication and dissemination of tweets compared to the previous year. The participation of relevant profiles is also reflected in graph 1, which shows the profiles with more than 300,000 followers that participated in each hour. Most of them were media, leaders, political parties and left-wing activists. The double-scale graph shows the relationship between the number of tweets published in an hour, original tweets or RTs, and the possible reach. Reach is calculated as the sum of the followers of those who posted in each hour.

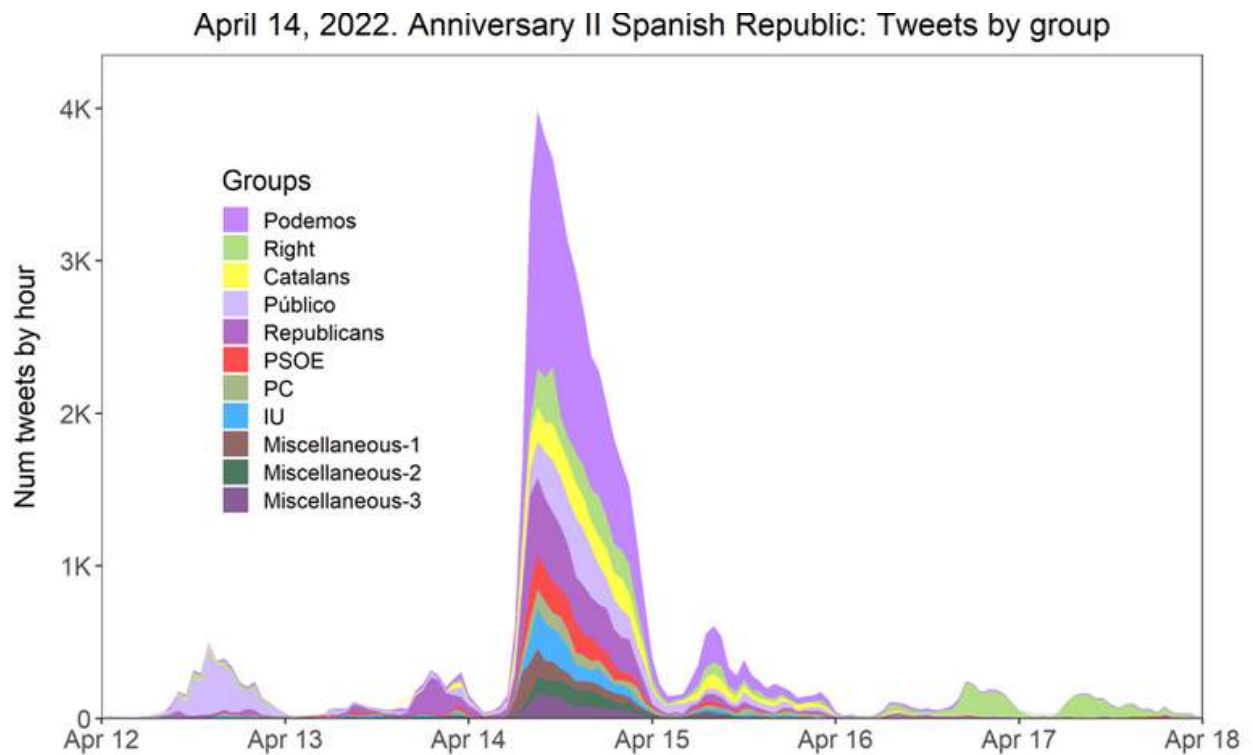
April 14, 2022. Anniversary II Spanish Republic: Tweets by hour vs. Reach



Graph 1

Tweets vs. Reach

The participation of the different groups is shown in graph 2, which shows how all groups concentrated their tweets at 9:00 (GMT).



Graph 2.

Tweets per group

CONTENT ANALYSIS

In the top ten we find five tweets from the Podemos front and two from the right-wing group. However, the most shared tweet was that of the conservative politician Rosa Díez, located in the right-wing group, which is closely related to Convivencia Cívica Catalana's tweet on Historical Memory.



Furthermore, the Diario Publico poll, which revealed the republic as winner (52.7%) over the monarchy, was the second most shared content.



However, the left had a greater presence during the day, also in the most popular tweets, and within this axis Podemos played a major role.



Tweet captured by [screenshot.guru](#)

151450090444824901



Tweet captured by [screenshot.guru](#)

1514520465597966897

Within the Catalan group, there are noteworthy messages comparing the Spanish Republic with the current democracy in terms of repression, and also referring to the 1st October referendum.



The most widespread tweets among this group had more presence from the Catalan right, although there were also some on the left that focused especially on remembering Macià's speech on 14th April 1931.



To see all the most popular tweets from each community, please consult the following link: [14deAbril_2022_top_tweets.pdf \(dropbox.com\)](#)



EUROPEAN DAY OF REMEMBRANCE OF THE VICTIMS OF TERRORISM

This commemoration is analysed for the first time in the Online Memories project. The date, 11th March, commemorates the memory of the worst terrorist attack in Europe, which took place in Madrid's Atocha Station in 2004. In fact, it was in the same year that the European Parliament approved the recognition of this commemoration. However, there are no associated institutional acts at the European level or any promotion of a public memory from the institutions. For this reason, we decided to track the reality of social media and check whether this lack of action is also reflected in this space or whether, on the contrary, a public memory has been generated.

It is not very well known why this event is celebrated on 11th March, and outside Spain the reference 11M has hardly been used, referring only to the day of the victims of terrorism in different languages of the European Union. In Spain, the opposite occurred: the date 11M was used massively and the reference to the European Day in Memory of the Victims of Terrorism was rarely used. Moreover, we must bear in mind that in Spain the memory of 11M has created a lot of controversy regarding the authorship of these attacks, which some right-wing political sectors attributed to ETA and not to Al-Qaeda, creating multiple conspiracy theories that still persist 18 years later.

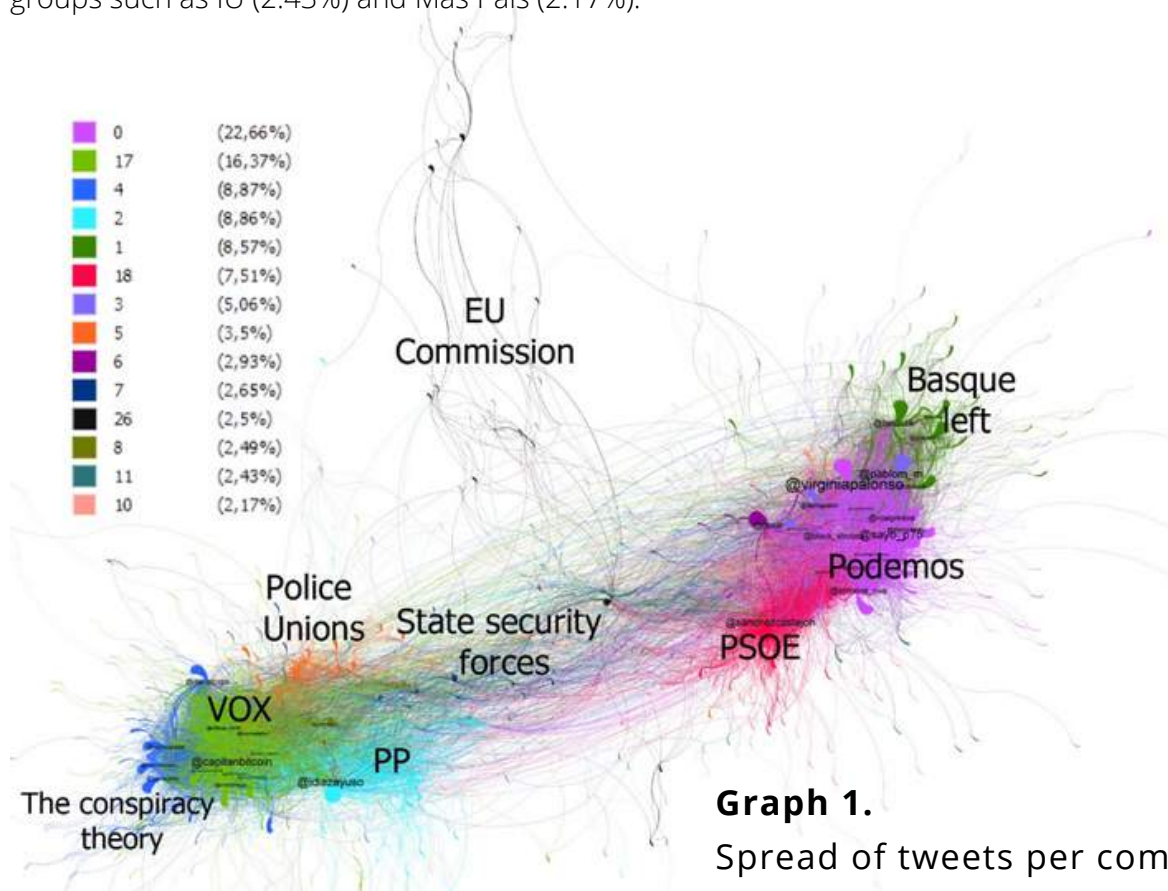
Focusing on the data, user participation was unusual, with the proportion of retransmitted messages to original messages being very high (92%). This indicates that there was a lot of attention to what was being posted about 11M, producing a lot of retransmission. However, compared to other commemorations, it is certainly the one with the lowest rate of support.

Table I. Evolution of participation.

Year	Original Tweets	Tweets + RTS	%RTS	Unique users
2022	6,026	81,540	92.6%	39,063

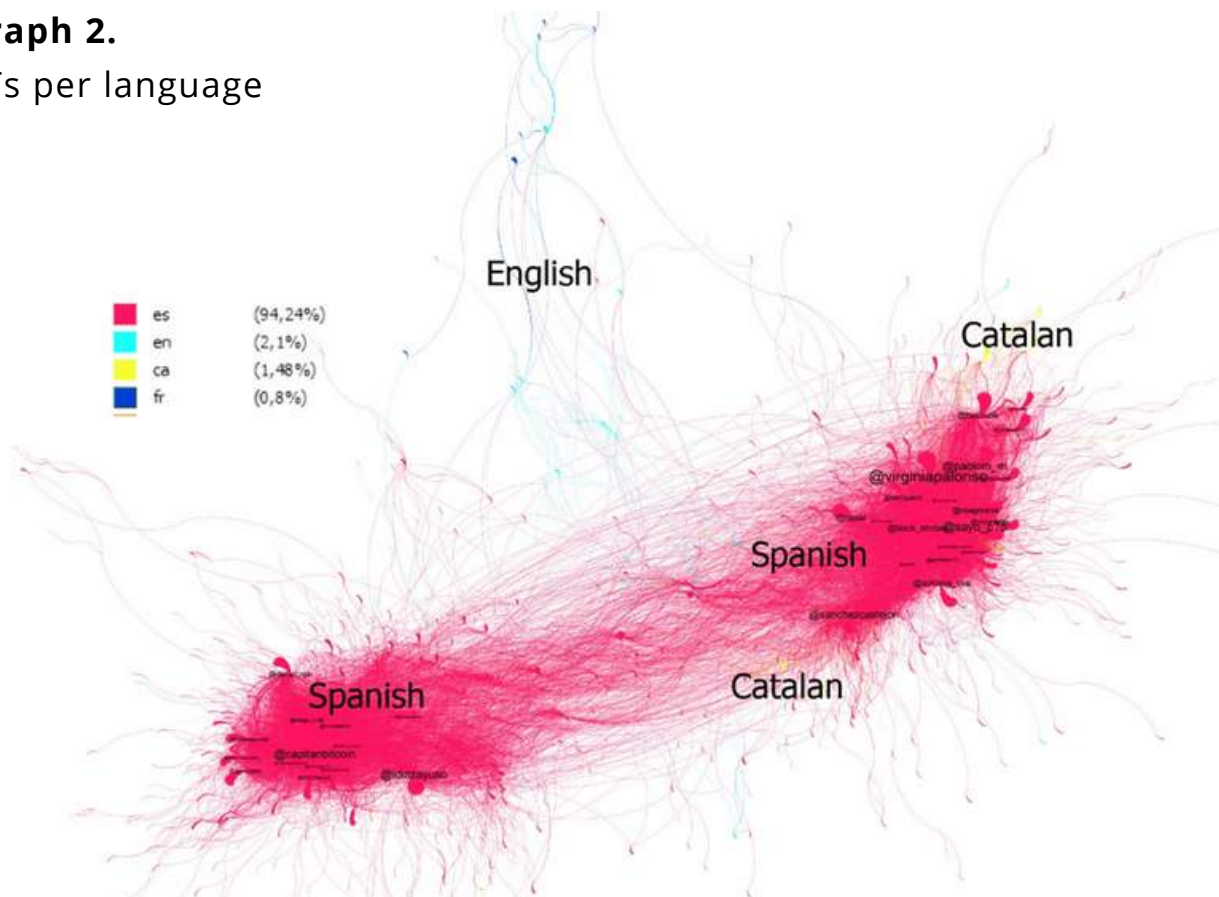
Turning to the analysis of the communities, the structure of the retransmission shown in graph 1 presents a division into two blocks between the left-wing and right-wing ideology in Spain. The European Union appears with very little participation and weak connections that are joined by the central part of the two blocks (graph 1).

Dissemination has been concentrated in the Spanish political extremes: Podemos with 22.66% of profiles and VOX with 16.37%. The conspiracy theories group accounts for 8.67% of users, ahead of the PP (8.86%) and the PSOE (7.52%). A group from the Basque left also appears strongly with 6.57% of profiles, commemorating the memory of a baker from Pamplona who was murdered for not wanting to hang a sign in his bakery accusing ETA of the attack. The security forces group has 2.65% of profiles and the police unions group, 3.5%. The European Commission group has a loosely connected structure and is far removed from the two polarised blocks. Finally, the smallest groups are associations of victims of terrorism (2.49%) and left-wing groups such as IU (2.43%) and Más País (2.17%).

**Graph 1.**
Spread of tweets per community

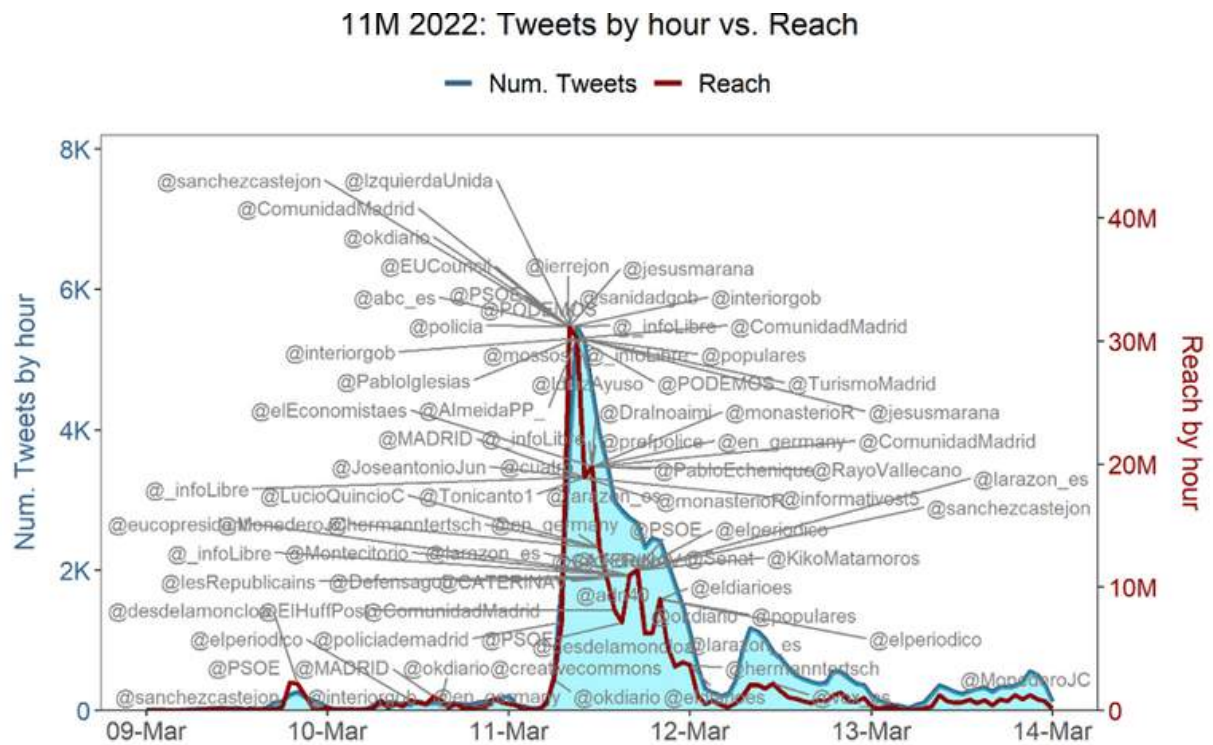
In the language distribution (graph 2) Spanish predominated at 94.24%, followed by English (2.1%) used in the European Commission group. Catalan was used by 1.48% of the profiles. In the case of this commemoration, the monopoly of Spanish is normal considering that the attacks took place in Spain.

Graph 2.
RTs per language



In the case of this commemoration, most of the tweets did not use hashtags, a fact that enables us to locate a memory space afterwards. However, within the limited use, hashtags were used more frequently by the PP group, the state security forces, the police unions and part of Podemos and PSOE. The most used hashtag was #11M.

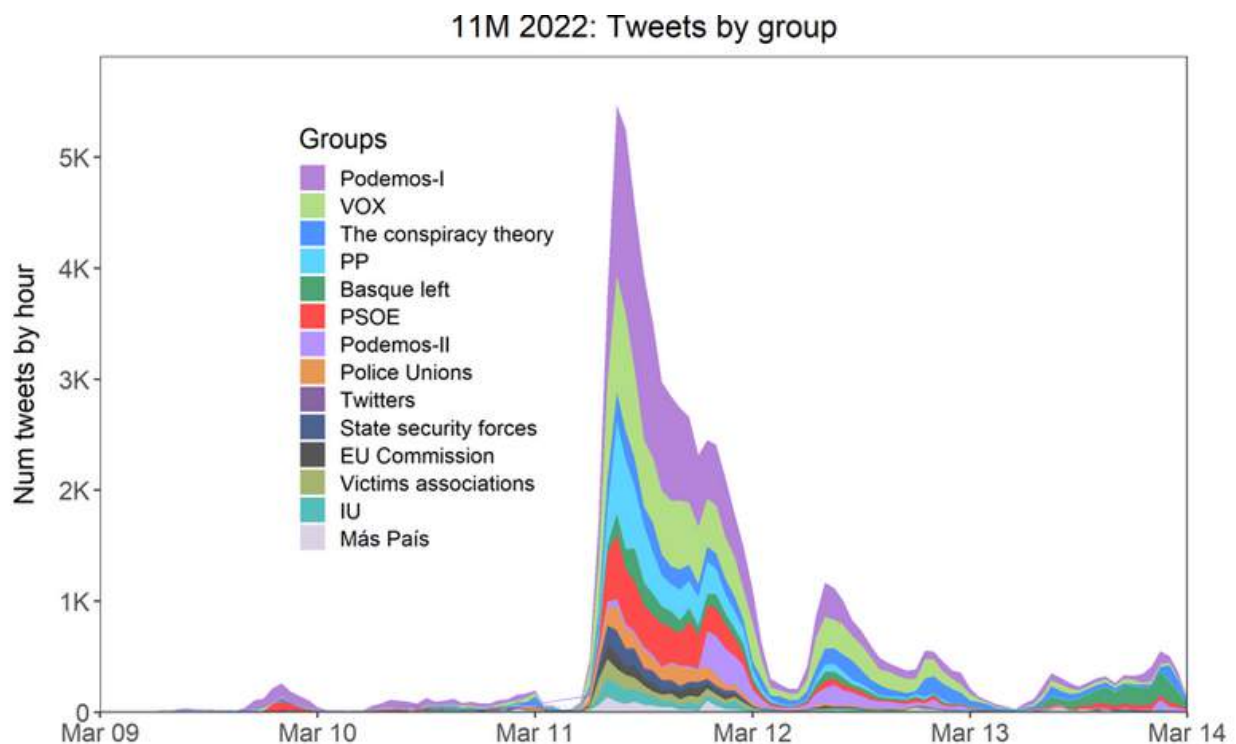
An alternative view to the propagation represented by graphs is the temporal evolution of the publication of original tweets. As usual, the intensity was lower on the days before and after the day of the celebration. The bulk of tweets were concentrated on 11th March. Graph 1 shows the relationship between tweets published and RTs received in one-hour intervals. It is a graph with two scales: tweets from 0 to 546 and retweets from 0 to 4,923. The participation of relevant profiles is also reflected in the same graph, in which the profiles with more than 300,000 followers that participated are noted. Most of them were institutions, politicians and media. The double-scale graph shows the relationship between the number of tweets published in an hour, original tweets or RTs, and the possible reach. Reach is calculated as the sum of the followers of those who posted in each hour.



Graph 1.

Participation vs. Reach

The participation of the different groups is shown in graph 1, which shows European times (peak time at 9:00 GMT), with little presence from America.



CONTENT ANALYSIS

Among the most widely circulated tweets, most notable are those recalling the controversy over the authorship of the attacks.



Tweet captured by [screenshot.guru](#)

150220836355438594



Tweet captured by [screenshot.guru](#)

1502760588825037140



Tweet captured by [screenshot.guru](#)

1502356362319187969

Furthermore, there is also the memory of Ángel Barrueta, especially among groups in the Basque Country, also appealing to the dirty war of attributing the attack to ETA.

Institutional messages from Spanish politicians, both left-wing and right-wing, are also noteworthy.



Tweet captured by [screenshot.guru](#)

1502186210960675076



Tweet captured by [screenshot.guru](#)

1502186210960675076

From right-wing quarters, the most widely disseminated messages sidestepped any knowledge about the whole truth about the attacks - again raising confusion about the perpetrators - and also emphasised that there was political gain for the PSOE, who three days after the attacks won the general elections against the predictions of the polls prior to the attacks.



VOX, order: 2



To see all tweets:

europeanmemories.net/wp-content/uploads/2022/09/11M_2022_top-1.pdf



INTERNATIONAL WOMEN'S DAY (8M)

This is the first analysis of the reaction on Twitter to International Women's Day, a historical holiday linked to the women's labour movement in textile factories, which has been internationally recognised since the early 20th century. For the analysis, tweets related to this worldwide celebration were collected in English, Spanish, Portuguese, Italian, French and German. The use of the hashtag #8M was omitted because it was studied separately due to its use being very limited to Spain and the protests. For this reason there are two datasets. The first dataset collects the celebration terms and the #8M dataset collects the most radical ones because they are linked to the strikes and protests called. The data in this first dataset includes countries from all continents, while the #8M protest data, which is more related to feminism, was only found in Spain and Latin American countries. It is worth noting that, with the exception of Spain, there are very few tweets from European countries.

The participation in the celebration of this anniversary of remembrance of the event was much higher than the activist participation in #8M, more related to the current feminist agenda, almost three times the number of unique users, original messages and amplification of RTs. The ratio of retransmitted messages to original messages was lower than normal (75.41%). A similar percentage of RTs is very similar in both cases.

Table I. Evolution of participation.

Dataset	Year	Original Twets	Tweets + RTs	% of RTs	Unique users
#8M	2022	297,238	1,290,792	76.97%	515,742
#Women_day		856,270	3,482,227	75.41%	1,635,542

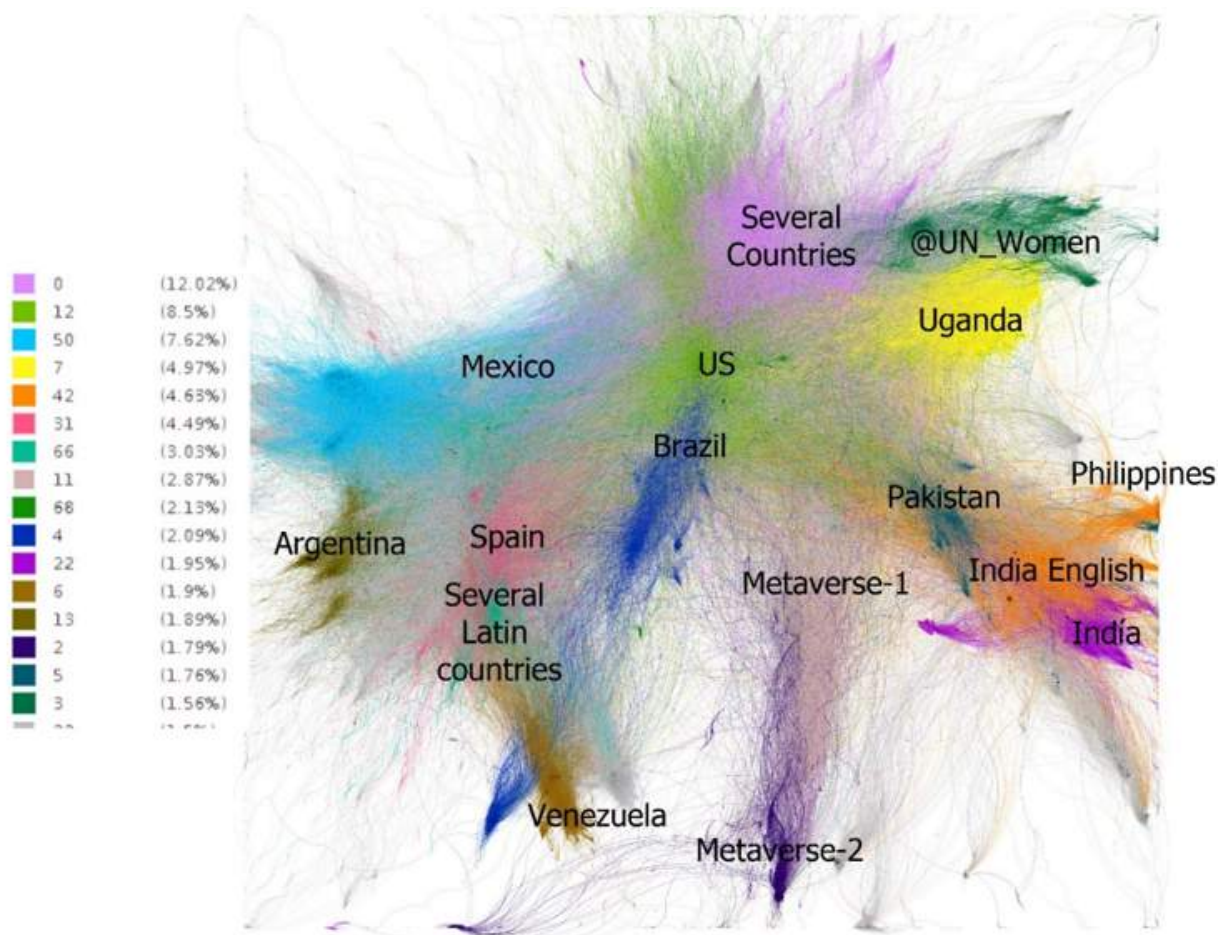
Starting with the analysis of the graphs of the first dataset, the structure of the retransmission in graph 1 is star-shaped, a classic structure when several countries are involved. In this case, due to the existence of language barriers, the connections of the groups are contingent on language and, within language, divided into continents and countries. In this case, there is a clear continent-country distribution, with Spanish-speaking countries grouped on the left, English-speaking countries on the right and Portuguese-speaking countries in the centre and below. There is also a group whose profiles are defined as inhabitants of the metaverse mixed with other users of real locations. No divisions per ideology have been observed.

The group with the most profiles **Several Countries** (12.02%) is made up of users from different backgrounds who post on a variety of topics and use English. The second group **US** (8.5%) is made up of US accounts led by White House profiles. The third group **Mexico** (7.62%) includes tweets both for and against the Mexican government. The fourth group **Uganda** (4.97%) is a mixed group of African countries with tweets of Ugandan origin - the first time we were able to track the African participation in a commemoration. The fifth group **India English** (4.63%) corresponds to tweets originating from India written in English. The sixth group **Spain** (4.49%) contains a majority of Spanish profiles with very varied messages, the most striking of which were: Forges, some men supporting women, some anti-feminist tweets presumably from women and one from the Barcelona football club supporting women's sport. The seventh group **Several Latin Countries** (3.05%) includes the most radical tweets and shares the hashtags #DiaInternacionalDeLaMujer with #8M. The eighth group **Metaverse-1** (2.07%) is a group related to Web3, e-sports, video games and NFTs. Many of the group claim to live in the metaverse and others come from other countries. The ninth group **@UN_Women** (2.13%) groups together users who tweeted about UN Women's institutional accounts. It is located between the majority group "Several Countries" and the African group **Uganda**. The tenth group **Brazil** (2.09%) contains a variety of messages; two of the most popular in the group have the same video (we do not know the context), the rest are congratulations to women, mention of menstrual poverty and some related to politics. The rest of the groups contain less than 2% of the profiles: **India** (1.95%), **Venezuela** (1.9%),

Argentina (1.98%), **Metaverse-2** (1.79%), **Pakistan** (1.76%), **Philippines** (1.56%). We can highlight, therefore, that it is the first commemoration where the participation of the so-called Global South gains ground and is claimed through feminism.

Graph 1.

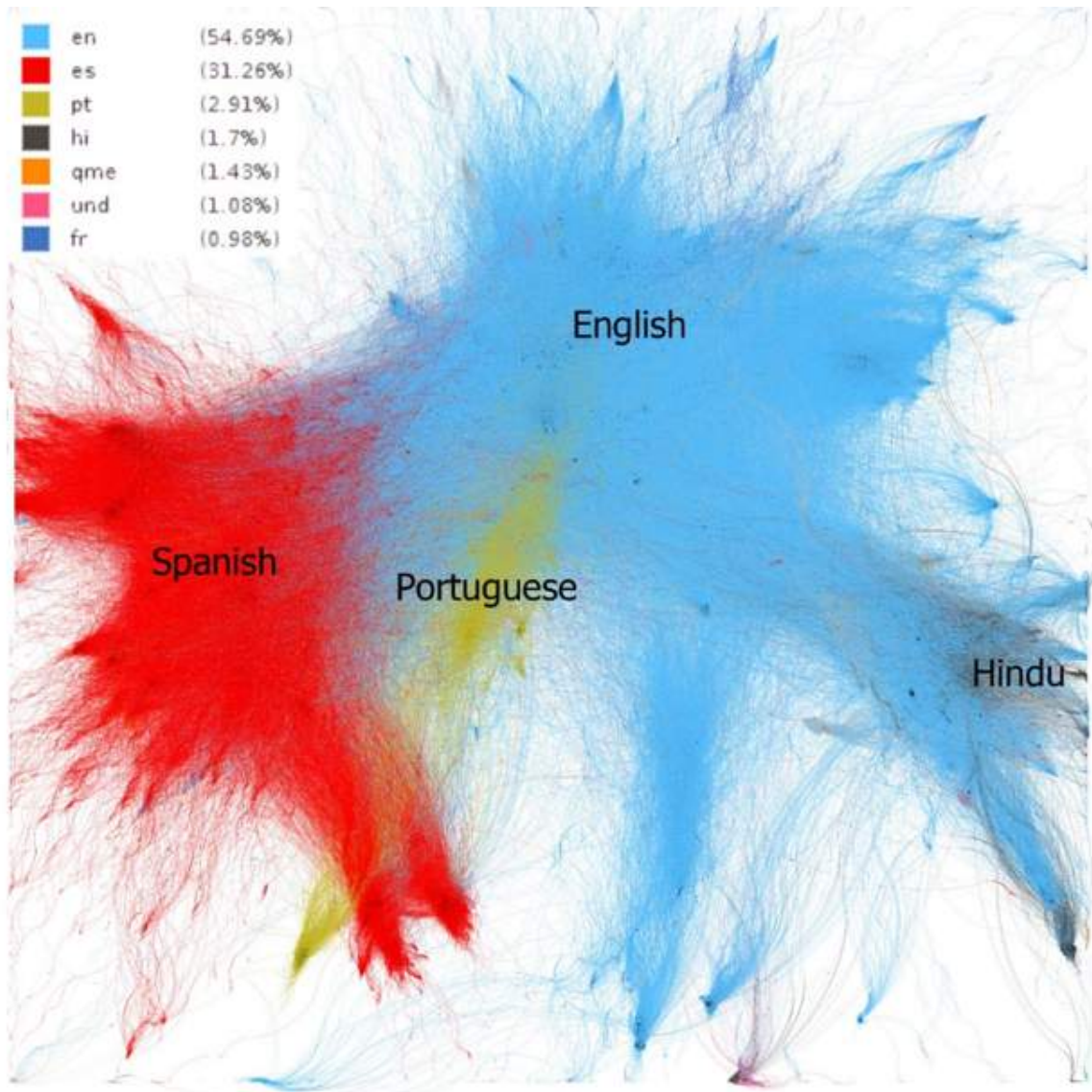
Spread of tweets per communities



In the language distribution (graph 3), English predominated in 54.69% of the tweets. The second language detected was Spanish (31.26%), the third was Portuguese (2.91%), the fourth was Hindi (1.7%). The rest of the languages were used very sporadically.

Graph. 2

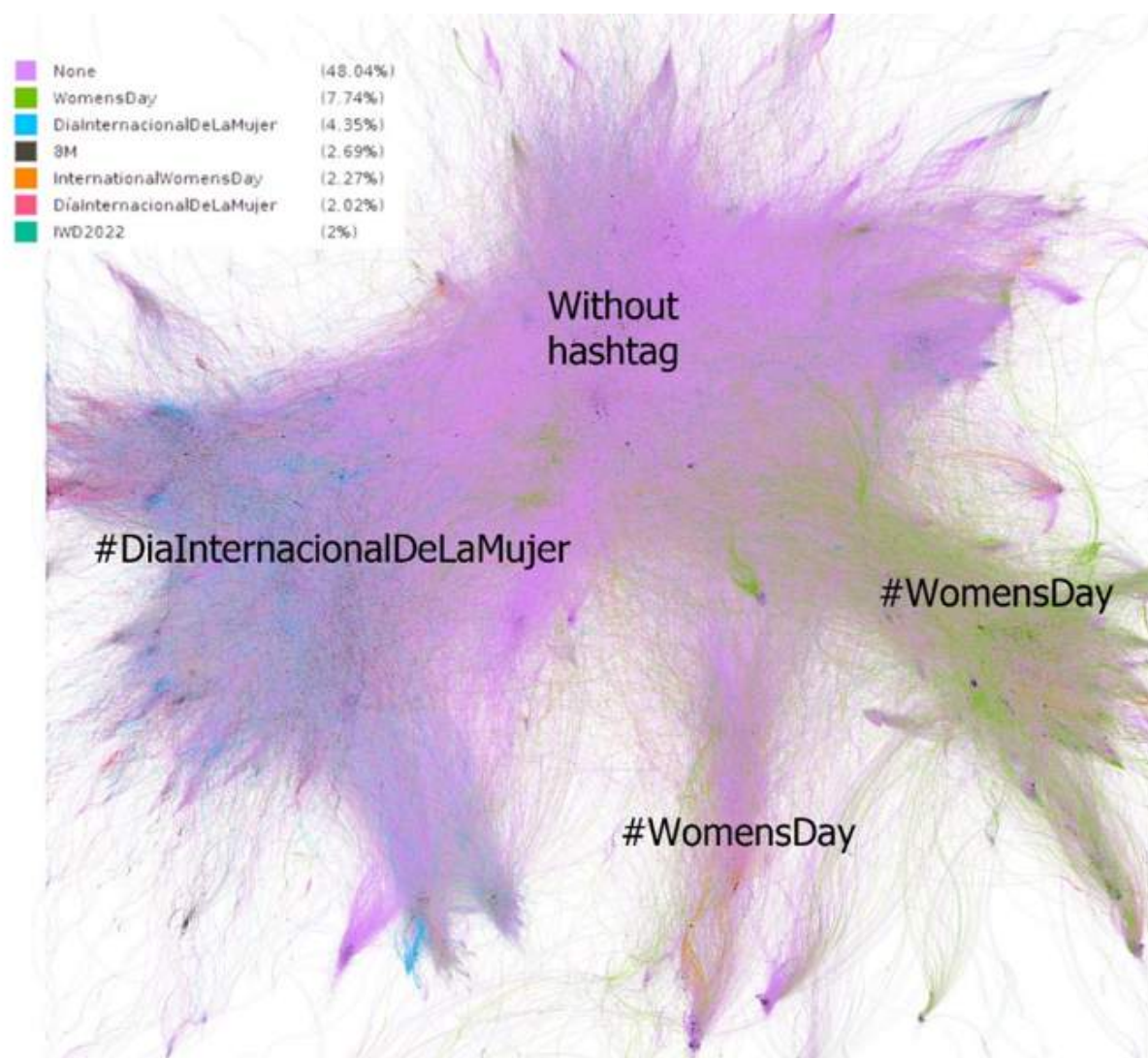
RTs per language



A significant proportion of the tweets (although less than on other occasions) did not include a hashtag (48.04%). We can therefore locate quite a few tags according to the communities. The most frequent hashtag was #Womensday (7.74%) used mostly in India and Pakistan - and in some areas of the Metaverse self-located profiles. The second most used hashtag was #DiaInternacionalDeLaMujer (4.35%) used in the Spanish-speaking area. The rest of the hashtags used were: #8M (2.69%), InternationalWomensDay (2.27%), DíaInternacionalDeLaMujer (2.02%), #IWD2022 (2%) graph 3).

Graph. 3

RTs by hashtags



As usual, the intensity was lower on the days before and after the day of the celebration. The bulk of tweets were concentrated on 8th March. Graph 4 shows both the temporal dissemination and the participation of relevant profiles - with more than 10 million followers who took part. Most of them were media and institutions. The double-scale graph shows the relationship between the number of tweets published in an hour, original tweets or RTs, and the possible reach. Reach is calculated as the sum of the followers of those who posted in each hour.

Participation vs. Reach

Worksheet: Day 2022 - Template for students

Graph. 5
Tweets per group

Tweets per group

Focusing on the second dataset, specific to the hashtag #8M, we can see clear differences, which we will be able to observe better with the contents later on. The hashtag #8M is socially associated with feminist demands and is used among all feminist stances. In Spain, since 2020, feminism has undergone a split between institutional feminism and feminist platforms, to the point that in 2022 the demonstrations in Madrid were separate. For this reason, tweets containing hashtags from both factions have been collected. Terms related to "El día de la mujer trabajadora" were not analysed in this report as they are more institutional. However, they will be studied separately to see the differences.

The greatest political, media and popular support for feminism took place in Spain in 2018, and was reflected in the report La comunicación del movimiento feminista [3]. In 2019 it continued to maintain its strength, but in 2020, at the beginning of the COVID19 pandemic, it sparked much controversy. The government was accused of having contributed to the spread of the pandemic with these demonstrations. A week later, a state of emergency was declared and the population was locked down. In 2021 there were no demonstrations on 8th March. In 2022 they resumed. However, this year the participation was massive in Latin America, especially in Mexico. In Latin American countries, the fight against femicide has joined the struggle for women's rights, which is why Mexico has an enormous role to play.

It should be noted that under the hashtag #8M only messages in Spanish are grouped together. Other European countries, the United States and Canada did not use this hashtag. In 2018 there was a very significant use of this hashtag in Italy, but this year it has disappeared (see table 1 again).

Regarding the communities, the structure of the retransmission is star-shaped, a classic structure when several countries participate. As always, there is a grouping per country and in some of these, a division according to ideology. In this case, as there are no language barriers, the connections of adjacent groups are strong.

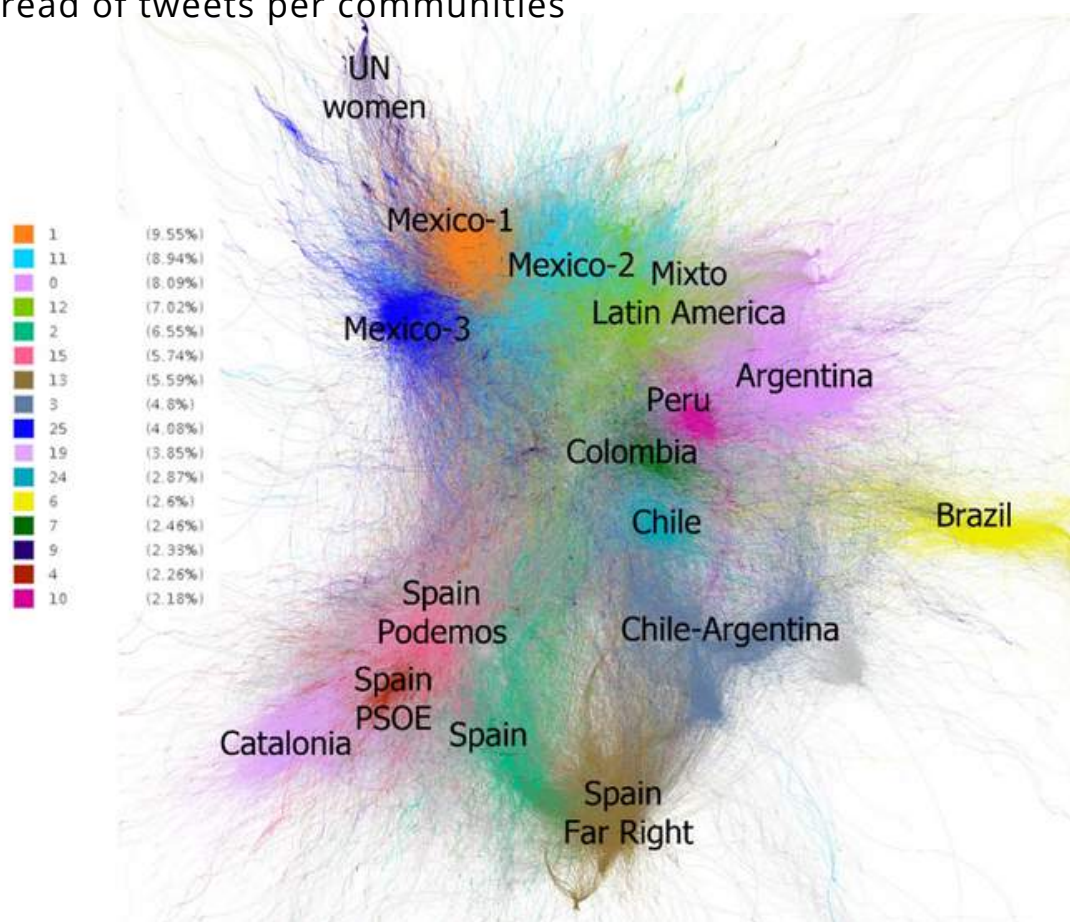
There is a clear distribution per country, with Latin American countries grouped in the upper right (graph 1) and the different groups in Spain in the lower left. The connections between the continents are per ideology: the Spanish left with the Mexico-3 group, those of the radical right with a Chile-Argentina group.

[3] <https://calala.org/wp-content/uploads/2021/10/comunicacion-mov-feminista-estado-espanyol.pdf>

The group with the most profiles (9.55%) is Mexico-1, where many tweets against femicide and blaming the current government for not improving this problem can be seen. The second group (8.94%) is Mexico-2, also related to femicide complaints. The third group is a group from Argentina (8.09%) and femicide is also one of their complaints. The fourth group Latin America (7.92%) is a mixed group of countries on the border of this map between Mexico and Argentina that also includes messages about disappeared and murdered women. The fifth group Spain (6.65%) corresponds to a Spanish group not linked to politics with messages of different kinds. It includes criticism of a tweet from Iberdrola on International Women's Day and one from the Spanish Sports Federation. The sixth group Spain-Podemos (5.74%) was that of Spain's institutional feminism, which included a video made for this celebration and disseminated by the Ministry of Equality and its female minister, as well as messages from the secretary general of Podemos. The seventh group Spain Far Right corresponds to the Spanish extreme right, with messages criticising the celebration of 8M and Iberdrola's advertising. The eighth group Chile-Argentina (4.5%) contains messages against the director of INADI (National Institute against Discrimination, Xenophobia and Racism) of Argentina. The ninth group Mexico-3 (4.08%) contains tweets of women carrying flowers to the police. The tenth group Catalonia (3.85%), where the varied messages include feminist messages, mentions of the rape of a minor in Igualada or in Ukraine. The remaining groups in order of number of profiles were Chile (2.87%), Brazil (2.6%), Colombia (2.46%), UN Women (2.3%), Spain PSOE (2.26%) and Peru (2.18%).

Graph. 6

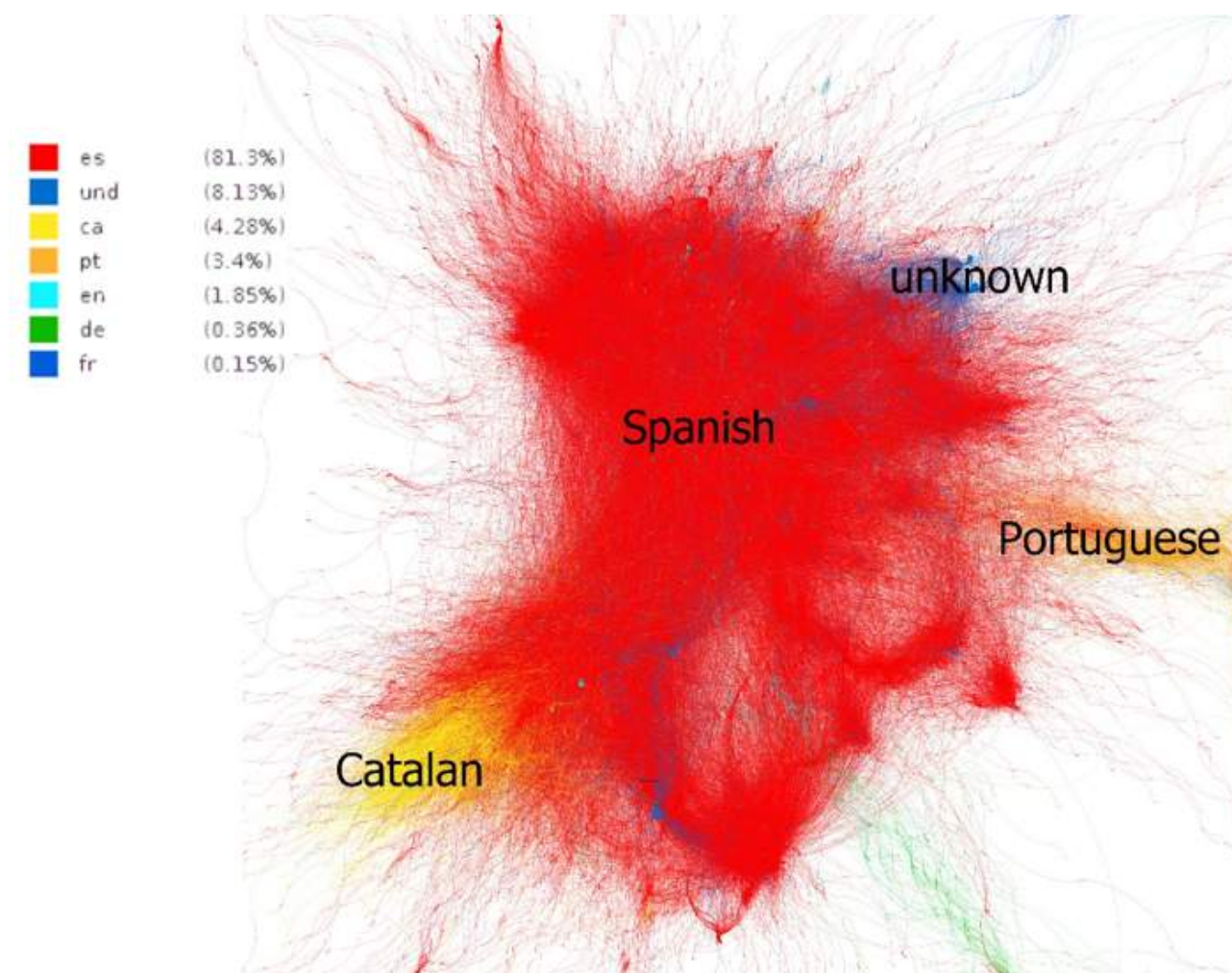
Spread of tweets per communities



In the language distribution (graph 2), Spanish predominated in 81.3% of the tweets. There was a large number of messages with no identifiable language (8.15%), possibly because they did not include text or only contained tags. These tweets were mostly generated in the Argentinean community. The second language detected was Catalan (4.28%) and the third was Portuguese (3.4%). The rest of the languages were used very sporadically.

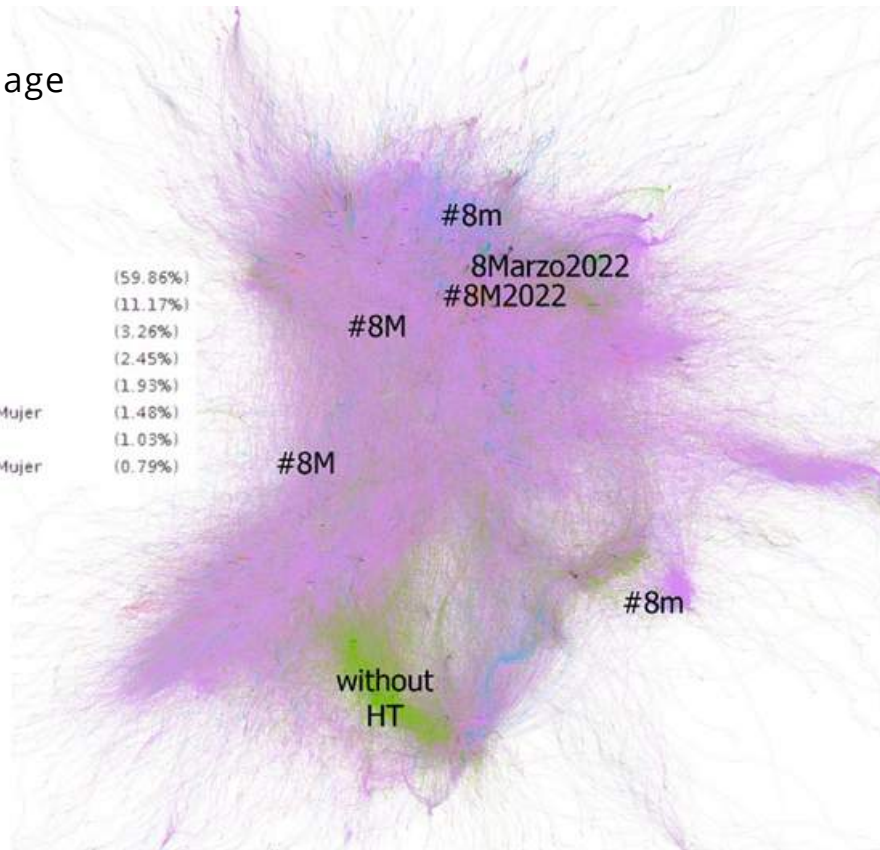
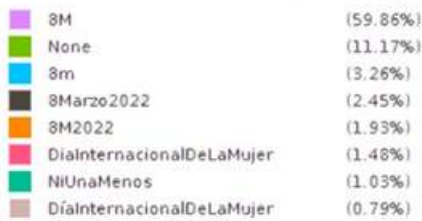
Graph. 7

Graph of RTs per language



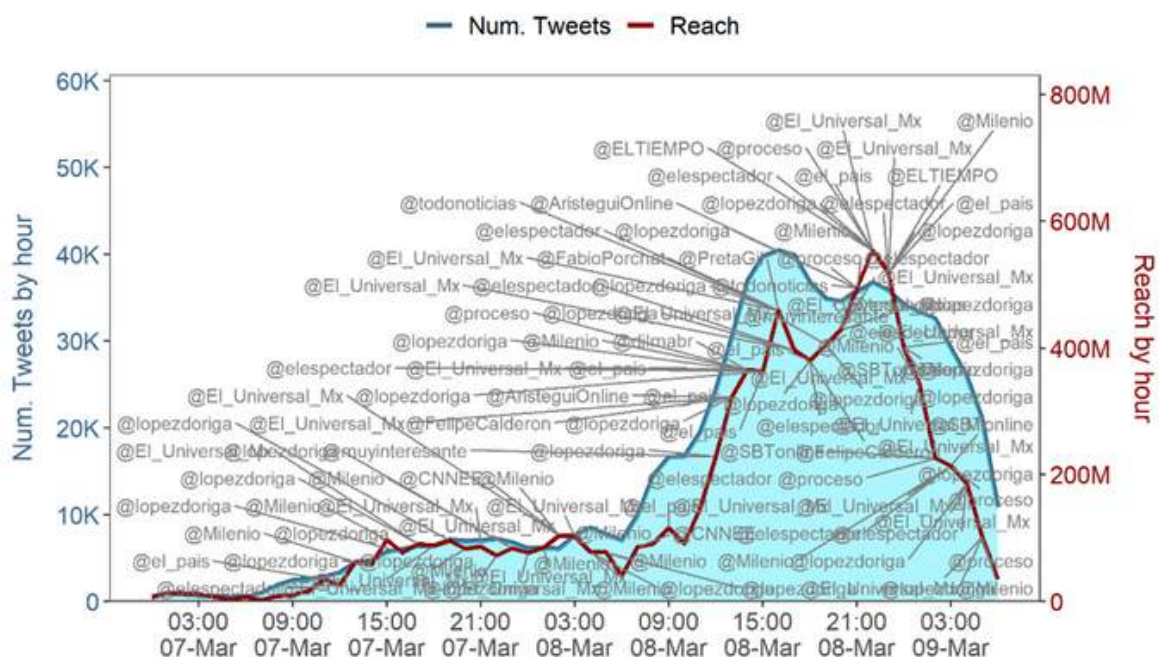
The majority of tweets included the hashtag #8M (59.86%). Only 11.17% did not include any hashtag, most of them in the Spain community. The rest of the hashtags used were in this order according to their use: #8m (5.26%), 8Marzo2022 (2.45%), #8M2022 (1.93%), #DialInternacionalDeLaMujer (1.48%), NiUnaMenos (1.03%) and #DialInternacionalDeLaMujer (0.79%) (graph 7).

Graph. 8
RTs per language

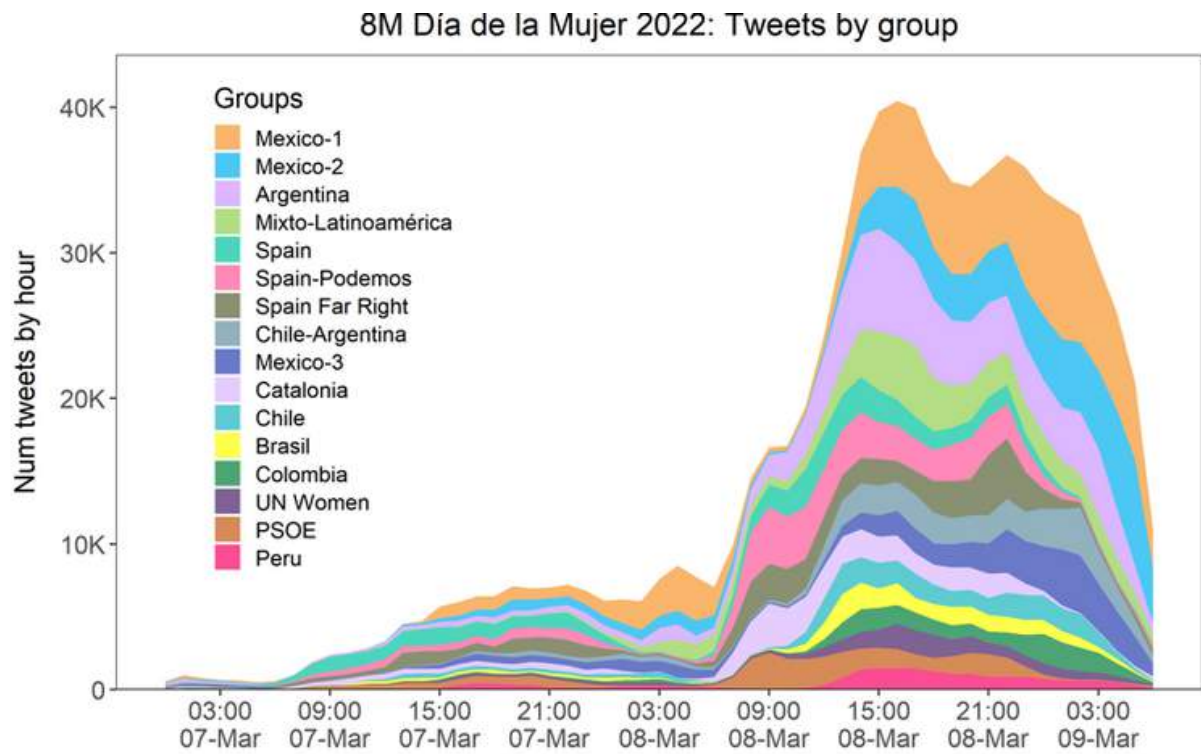


If we focus on the time spread, the participation of relevant profiles is reflected in graph 1, which shows the profiles with more than 5 million followers that participated. Most of them were media and politicians. The double-scale graph shows the relationship between the number of tweets published in an hour, original tweets or RTs, and the possible reach. Reach is calculated as the sum of the followers of those who posted in each hour.

8M Día de la Mujer 2022: Tweets by hour vs. Reach



Graph. 9
Participation vs. Reach



Graph. 10

Tweets per group

CONTENT ANALYSIS

The main difference between the contents of the different datasets, as already noted, is the activist tone. The first one has a more festive and memorial, even institutional nature, the second one is much more political and has more to do with the current feminist agenda. Nevertheless, the boundaries are porous.

Among the most widely circulated tweets in the first dataset, therefore, we observe a much more relaxed tone.

Tweet captured by [screenshot.guru](#)[View on Twitter](#)Tweet captured by [screenshot.guru](#)

1501292056756424705

Tweet captured by [screenshot.guru](#)

1500599714101739521

In contrast, the second dataset, as we have said, has a more political tone and also reveals the divisions within Spanish feminism - especially in relation to the trans law. There was also controversy over Iberdrola's advert, which was parodied, reproaching the price of electricity - and its relation to the feminisation of poverty.



Also noteworthy are the numerous demonstrations in Latin America, focusing on femicides.



To see the most relevant tweets from each community in the first dataset:

https://drive.google.com/file/d/1RD967_OF7_X-tNb4KDF4USnPI1_NyP7F/view?usp=sharing

To see the most relevant tweets from each community in the second dataset:

<https://drive.google.com/file/d/142jwPdhMWTmABNc94YMA6d2oGIFv-GQb/view?usp=sharing>



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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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