
Miscellaneous

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Evaluating the Influence of Disinformation Narratives on a Divisive Election Campaign

Abstract

Despite extensive research on disinformation, its societal impact remains uncertain. Previous studies have primarily focused on the spread of disinformation, especially on platforms like Twitter, or on how exposure influences attitudes. Additionally, research has examined disinformation's effect on voting behaviour during major electoral events. Our research contributes to ongoing debates about the spread and impact of disinformation by adopting a narrative-based approach, allowing us to examine how disinformation narratives, rather than isolated pieces of content, permeate public opinion during the 2021 Catalan elections, held amidst the COVID-19 pandemic. Collaborating with a leading fact-checking organization, we identified key disinformation narratives and conducted a survey (N = 1650) to evaluate their impact. Findings reveal that the spread of disinformation during the 2021 Catalan elections was significant, with most narratives reaching over 50% of respondents. However, the impact on belief was lower, with only a few narratives being trusted by a substantial portion of the public. The study also highlights that prior exposure to disinformation increases the likelihood of believing it, aligning with previous experimental research. While ideological orientation influences belief in disinformation, it is less critical than prior exposure, and its effect varies depending on the narrative's topic. Our results underscore the need for future research to explore the “repetition effect” and the role of different media formats in amplifying disinformation, as well as to consider societal factors like age and gender in understanding trust in disinformation.

Keywords

Disinformation, narratives, reach, impact, elections

1. Introduction

Research on disinformation and broader information disorders has faced challenges in assessing the true impact of such content. Despite an expanding body of literature, the societal effects of disinformation remain unclear (Zannetou et al., 2019; Bradshaw & Howard, 2018). Disinformation campaigns are generally understood to aim at eroding societal trust, particularly in political actors and institutions, while deepening existing societal divisions (Richter, 2017; Colley et al., 2020).

Domestic actors, including politicians and journalists, also contribute to creating and spreading false content, further complicating the study of its effects. The diverse motives and strategies behind these actions complicate our understanding because they may not always aim to diminish trust but rather to achieve specific political objectives. Current definitions of information disorders categorize content based on the intent behind its creation or dissemination (Wardle & Derakhshan, 2017), yet these categories don't fully capture the complexity of how content is shared and perceived. To better assess the societal impact of disinformation, it is crucial to adopt theoretical frameworks that address these from a holistic perspective.

Firstly, to assess societal impact it is necessary to consider the role of the final recipient of false or misleading content, the audience (Tandoc et al., 2017). Rather than passive receivers, audiences have an important role in the spread of content related to information disorders, to the extent that some authors defend a certain participatory nature of disinformation (Asmolov, 2018; Wanless & Berk, 2017). As “unwilling crowds” (Starbird et al., 2019) audiences not just merely receive content but also share it in its original form, reshape it into a different format (for example, a meme), comment on it or aggressively defend it in social media. Previous research (Starbird et al., 2019; Wilson et al., 2020) has proven how the goal of disinformation campaigns is precisely this: to move beyond the realm of their own “bots” and “trolls” as well as like-minded online communities to be able to reach other social groups and actors that are unaware of the goals and even the existence of the original disinformation campaign. Furthermore, the technological affordances of social media platforms, as well as social practices adopted by audiences, make them perfect ecosystems for false information to spread (Masip et al., 2021). As propaganda and disinformation deceive citizens, they eventually will share such content with friends and acquaintances (Flore, 2020), who will become more likely to believe it due to the fact that it has been shared by people they trust (Suau, 2015). Hence, social factors, as well as algorithms designed to amplify certain content, contribute to the spread of information disorders.

Secondly, societal impact needs to be researched through cross-platform studies. Most studies on disinformation are focused on a single online platform, with a common overemphasis on Twitter (now X) due to its easier data accessibility, although research has been focused also on other online platforms such as Facebook, YouTube or even in news media (Arif et al., 2018; Broniatowski et al., 2018; Hussain et al., 2018; Starbird, 2017). Although such studies are relevant for researching the spread of certain content on a specific platform (or through news media), if our aim is to study societal impact we need to take into account that content spreads through multiple platforms as audiences remediate and transform the original content into something new and through other media formats and online platforms. As previous research has identified (Flore, 2020), disinformation campaigns are based on spreading a certain narrative through different contents and formats, continuously through time and aiming at social reproduction and remediation. Taking this into account, as stated by Starbird et al. (2019, p. 4), “evaluating disinformation is less about the truth value of one or more pieces of information and more about how those pieces fit together to serve a particular purpose”.

Following Zannetou et al. (2019), we suggest studying misleading content from a holistic approach, to see how disinformation narratives spread in multiple formats (images, textual claims, videos, etc.) and through diverse platforms and news media. As we will develop further in the literature review, this research is based on the differentiation between “reach” (understood as the spread of such content among a certain audience) and “impact” (the capacity of content to pass as true and therefore, mislead those who receive it). As pointed out by previous research (Starbird et al., 2019), to think about information disorders, and more specifically, about disinformation, it is necessary to understand such phenomena not in terms of single pieces of content but in terms

of how these pieces fit together to “build” narratives. Disinformation campaigns, foreign and domestic, are based on a particular purpose or goal, most of the time connected to plausible information yet exaggerated or decontextualized (Starbird et al., 2019). Around any given narrative or core idea, multiple different related content exist, originally made by the campaign designers, remediated and spread by anonymous citizens or amplified by news media or political actors.

The approach proposed in this research is using survey data to test the “reach” and “impact” of different disinformation narratives identified in the last election held in the Spanish region of Catalonia. This election was of high relevance as these took place after the Catalan referendum for independence (2017), not accepted by the central government, which caused the imprisonment and exile of Catalan politicians and leaders of civil society. The Supreme Court ruling on October 14th 2019, sentencing between 9 and 13 years in prison for pro-independence leaders triggered massive protests in Catalonia, with violent clashes of police and demonstrators. The COVID-19 outbreak started some months later, with a hard two-month confinement (March–April 2020) followed by strict social distance measures, and a vaccination campaign that started in 2021 (by the end of July 2021, 50% of the Spanish population was immunized). Hence, Catalan elections on 14 February 2021 are of high relevance in relation to disinformation: first, because they were the first elections after the violent protests of 2019 and, secondly, because the elections took place at a moment when vaccination was planned but had not yet started among the overall population.

2. Conceptualizing disinformation narratives

The concept of “narrative” has different meanings in different research fields. In cultural sociology, narratives are discursive forms of rhetoric, meaning-laden stories (Polletta et al., 2011) that contribute to citizens’ understanding of events, assigning moral meaning. Narratives are normally associated with emotions, using beliefs and values to increase their engagement as reminders of group or collective identity (Polletta & Callahan, 2017). Narratives are strong elements of polarization that can clearly mark boundaries between two groups (“us” vs “them”) in association with values or beliefs, therefore reinforcing group cohesion but also social division. Political parties, social movements, activists and other minority groups, all make use of narratives to shape public opinion, spread their ideas and mobilize for action (Braddock, 2020). As pointed out by Polletta (2009, p. 105), “storytelling is able to secure a sympathetic hearing for positions unlikely to gain such a hearing otherwise”. Hence, narratives are especially successful when they are ambiguous in their final goal, allowing each of us to attribute meaning according to personal experience and context, facilitating the adoption of fringe or minority positions, making them more acceptable or less antagonistic (Polletta & Chen, 2012).

Former research has identified the use of narratives in foreign and domestic disinformation campaigns (Weinberg & Dawson, 2021) as well as in hyper partisan media outlets (Trifiro et al., 2022), building on existing cleavages and opposite positions to diminish societal distrust and enhance polarization (Richter, 2017; Colley et al., 2020). Furthermore, as in the case of anti-vaxxer movements in the USA and in other countries, disinformation narratives have been also used to make connections between groups of apparently opposite ideological positions (far right and far left) but with the shared belief about distrust of traditional or official institutions (Weinberg & Dawson, 2021). Hence, disinformation campaigns might be created initially to target specific audiences and groups, with tailor-made content in different formats and spread through different platforms, addressing a specific narrative. However, the ultimate goal of such campaigns is not just to reinforce the attitudes of like-minded individuals, but to also reach the public with stories that can relate to them, triggering interest and spreading distrust (Polletta & Callahan, 2017). Here key is the use of emotions to ensure the “shareability factor” in online media platforms (Sarolta,

2022), using sensationalist or emotionally charged misleading content to increase response and visibility, ensuring that common audiences become unaware collaborators in the spread of misleading content (Bastos & Mercea, 2018). To this effect, it is important that the inherent narrative to which the content is related has some “rational core” of plausible, verifiable information or common understanding that contributes to its acceptance, or, at least, creates doubts about what is true or false (Starbird et al., 2019).

Hence, building on previous research we conceptualize disinformation narratives as a group or collective of content that refers to the same idea or story, based on current societal polarized issues, with a moral base that plays with emotions through a certain degree of plausibility. It is beyond the aims and purpose of our research to address the issue of the origin of such content or the existence or not of an organized disinformation campaign behind it. What matters for our goals is that the study of disinformation based on narratives allows us to move beyond the study of a single piece of content to better address the reach and impact of disinformation in a certain societal context. Such an approach responds better to the participatory nature of disinformation, as explained in the introduction. A single piece of content might be something that citizens may easily forget. However, the underlying narrative is more likely to be remembered, and therefore, easier to be tracked and researched for its reach and impact. Before explaining the methodology, we used in our research, however, we need to address these two relevant concepts, which will help us to define the hypothesis that guide this paper.

2.1. *Reach and impact of disinformation narratives*

The first step to assess disinformation effects is to analyze the spread of such content among any given population. Compared with typical forms of propaganda from the 20th century, printed or broadcasted, disinformation nowadays leaves a digital footprint that can be tracked and mapped. This means that some studies adopt methodologies based on studying the spread of certain content in an online platform to see how many citizens were exposed to it. This line of work produced interesting results, such as the finding by Vosoughi et al. (2018) who, after analyzing thousands of tweets, argue that false content spreads faster and deeper than truth, such pattern being more intense for political news than for news about natural disasters, science etc. Furthermore, false information spreads in Twitter more prominently due to the actions of humans rather than automated bots. Research also focuses on specific events, such as the 2016 US presidential elections, considered a relevant case study of foreign-sponsored disinformation. Research on Twitter and Facebook (Zannettou et al., 2019; Spangher et al., 2018) showed that accounts linked to Russian efforts to influence the elections managed to disseminate great amounts of content on such platforms, although their capacity to make their content viral and engage with a relevant audience was scarce. Relevantly, the only exception to this general trend were news published by Russia Today, the Russian state-sponsored news outlet.

Research has also focused on the audience gathered by online news media classified as producers of fake news in France and Italy (Fletcher et al., 2018), establishing that most of them have very small audiences, although their communities on Facebook are sometimes bigger than well-known news outlets, which suggests a very active niche community. Similar results in the US (Guess et al., 2019) propose how sharing from websites producing fake news was relatively scarce in 2016, being more likely between citizens 65 or older and among right-wing ideology and/or pro-Republican Party. Moreover, among those sharing political content on Twitter, just 6% got their content from fake news websites (Grinberg et al., 2019). Overall, content from fake news sources implied a mere 1.18% of total exposure to political content for the average Twitter user, confirming previous studies pointing to the limited reach of disinformation among the public (Guess et al.,

2018). Allen et al. (2020) focused on American news diets to analyze the reach of fake content, studying the relevance of sites labeled as fake. Their conclusion is that news consumption of any sort comprises just around 14% of American's daily media consumption, while fake news content is merely 0.15%. Furthermore, regarding news' consumption, including fake content, TV is still five times more important than online.

As mentioned, reach can be understood as the capacity of certain content to spread among the general population. Or, at the level of localized reach, the capacity of disinformation content to target specific audiences or subpopulations (Allen et al., 2020). Despite general concerns about the spread of disinformation, studies that researched the reach of such content point precisely towards a situation of limited reach regarding the general population. Previous studies focused mostly on certain kinds of content on one social media platform. Although our approach is different, researching disinformation narratives rather than specific pieces of content, our first hypothesis will be as follows:

H1: Disinformation narratives have a limited reach among the public, with similar low percentages of reach among the different narratives.

This does not mean that disinformation is not a serious societal problem. To get the whole picture, we also need to assess the potential impact of disinformation related content. That is to say, its capacity to pass as true and, therefore, mislead those who receive it. Moreover, it needs to be seen also if localized reach is actually detected and to what extent, as microtargeting is a common strategy in organized disinformation campaigns to ensure impact. Some studies, for example, have tried to measure the effects of Russian sponsored disinformation in the 2016 USA presidential election. Analyzing large social media datasets of citizens exposed to such online content, research found limited effects on online behavior after exposure (Spangher et al., 2018; Zannettou et al., 2018). Similar results have been produced in relation to the UK Brexit referendum, with scarce proof of effects, but more prominent results regarding the capacity of disinformation content to reach the desired societal target groups (EPRS, 2019; Weinberg & Dawson, 2021). Research to test the impact of disinformation has also moved beyond social media datasets to conduct controlled experiments on citizens' exposure.

The work of Richter (2017) on exposure to RTs coverage on the Ukraine conflict is relevant here. Participants were shown video clips from RT and/or from BBC, to then test their opinions about the subject. Participants just exposed to RT content were more likely to express a negative opinion of Western policy and were even more likely to trust several fake narratives about Russian-speaking Ukrainians. Despite this body of research, as pointed out by Starbird et al. (2019) there is still great uncertainty about the potential impact of disinformation narratives, foreign-sponsored or domestic, and its spread within the digital realm. Although it is, in theory, possible to analyze how a particular piece of content has spread in a certain platform, the participatory dimension of information disorders makes it impossible to be aware how content has been remediated and spread into different forms and other platforms. Although it is possible that effects of disinformation content are lower than is widely acknowledged, it is plausible that these effects are in fact hard to measure, as it happened with more traditional formats of propaganda (Bittman, 1985). Effects are likely going beyond the impact of a certain content, being more acute when narratives are spread through time and in multiple formats. Hence, rather than individuals affected by a particular story on social media, what is more likely is that perceptions are shaped if exposed to a continuous flow of misleading information (Katz, Lazarsfeld & Roper, 2017; Marwick, 2018).

That exposure can shape citizens' positions is something media and communication research has been aware of since prior to the Internet (Gilbert, Tafarodi, & Malone, 1993; Nyhan, 2020). Even

if the claim or argument is implausible, previous exposure may lead people to believe, endorse it or, perhaps, question the veracity of what is correct or incorrect (Fazio, 2015). More importantly, previous studies found that impact grows as exposure accumulates. Hence, citizens exposed to the same or similar narratives, but that received it from different sources and formats are more likely to believe the misleading claims (Prior, 2005; Guess, Nyhan, & Reifler, 2020). As disinformation narratives are designed to attract attention and play with emotions or current cleavages in society, they might be especially successful in shaping views and perceptions (Weinberg & Dawson, 2021). As Flore (2020) points out, repetition increases the ease with which content is analyzed and processed, which diminishes accuracy of heuristic mechanisms to assess its veracity.

Hence, we will assess the impact of disinformation narratives with our second and third hypotheses:

H2: Those citizens that have received the narrative before are more likely to believe it than those that have never heard about it.

H3: The effect of “having received the narrative before” is similar in all narratives under study.

Another factor that influences possible impact is ideology and pre-existing convictions. Citizens are more likely to believe content that confirms prior beliefs, group identity and political attitudes, especially if this comes from sources that they have identified as like-minded (Suau, 2015; Flore, 2020). In television, for example, it has been tested that those citizens that consume ideological and partisan news are more likely to trust misperceptions and fake stories than those with a healthy media diet (Kull, Ramsay, & Lewis, 2003; Garrett, Weeks, & Neo, 2016). This does not mean that citizens are likely to believe all information from news media or actors that they assess positively, but that from those sources they are more predisposed towards “directly motivated reasoning”. This is the psychological motivation to trust one side of the story or strongly disagree with the other version, due to our pre-existing positions on that issue. This makes all of us to be more skeptical of information that contradicts our preferences and more positive towards confirmatory content (Nyhan, 2020). Here we can see examples such as citizens who believe that Barack Obama was not born in the USA, associated with racial resentment attitudes among respondents (Jardina & Traugott, 2019), or how Republican voters changed through time their attitudes towards climate change as this started to be a partisan issue or divisive cleavage (Tesler, 2018). Hence, we will test the effects of ideology in disinformation impact according to the following hypotheses:

H4: Ideology plays a significant role in shaping if disinformation narratives are trusted.

H5: The effect of “Ideology” is different depending on the nature or topic addressed by the narrative.

Finally, to complete our model that attempts to assess the impact of disinformation narratives, we group the two main predictors, being exposed to the narrative and ideology. Hence, the final hypothesis states the following:

H6: To have received the narrative before, together with ideology, greatly determine if citizens trust disinformation content.

3. Methodology

3.1. Selection and construction of the narratives

The first step of our methodological design consisted of identifying the most relevant disinformation narratives about the election, to subsequently design the survey. Content that met all of the following criteria was collected: a) it circulated in social media networks

between January 18th (two weeks before the beginning of the official electoral campaign) and February 21 (one week after election day); b) it was flagged as disinformation by at least one of the top three Spanish fact-checkers (Newtral, Maldita and Verificat) being identified that the content was spreading not just in Catalunya but in overall Spain, and c) it dealt with topics related to the election process itself, the parties participating in the election, political figures in the parties participating in the election, or the political platforms of the parties participating in the election.

More than 100 pieces of such content were found, captured and documented. The material included formats such as memes, fake and real Twitter posts, links to hyper-partisan websites and other websites labeled as disinformation producers, WhatsApp text messages, declarations from politicians on TV, in the press, or on the radio, among others. This compendium was then shared with a team of journalists from fact-checker Newtral, to ensure no relevant piece of content was missing. It is worth mentioning that for this election, Newtral and Verificat were developing a close analysis of disinformation content through a joint team of experts, due to the relevance of the elections and the expectation that disinformation content was going to be widespread during the campaign. As explained, despite being a regional election, it gathered relevant media and political attention at the national level.

It was under this context that our research team collaborated with Newtral's fact-checkers and journalists in order to identify disinformation narratives. The procedure was conducted using the following method. The research team and the fact-checker team worked independently but in parallel, conducting the same process. For each content piece, the separate teams gathered the following information: 1) a description of the disinformation content; 2) up to 6 keywords; 3) a statement summarising the central idea that the content referred to, 4) a broad topic or "narrative" that the content could be clustered into with other similar pieces. Once concluded, the two teams shared the results and identified similarities and differences. No relevant disagreements between teams were found in relation to identifying the relevant clustering narratives, although the precise wording of the narratives was later agreed between the teams. The convergence of this parallel process, performed by the two separate teams, resulted in the identification of eight narratives during the Catalan elections, all of them included in the survey:

N1: The result of Catalan elections has been manipulated through mail vote (Manipulated elections).

N2: Barcelona City Council is illegally retiring posters from pro-independence parties (Posters banning).

N3: Spanish Health Minister (*and candidate in elections*) hides that he received the vaccine or that he had COVID-19 in the last debate (Health minister).

N4: Crime grows in Catalunya due to illegal and uncontrolled immigration (Crime and immigration).

N5: Islam has spread in Catalunya, being now mandatory in some schools (Islam in schools).

N6: Cuts in health during the economic crisis in 2019 have not been reverted, Catalunya has the worst public health system in Spain (Public health system).

N7: The Spanish government did not promote any economic assistance for businesses damaged by COVID-19 (Economic assistance).

N8: Podemos (*left wing party in coalition with PSOE in Spanish government*) has organized the protests after the imprisonment of rapper Pablo Hasél.

All narratives are somehow related to the election itself, or they refer to topics that are relevant for shaping the vote. In this sense, Pablo Hasél (N8) is a rapper convicted of charges including glorifying terrorism and insulting the monarchy. He was arrested in early 2021, after

defying charges and barricading himself in a university, triggering nationwide protests. Though not directly linked to the Catalan elections, the case was included for its political and social relevance.

3.2. Data collection and sampling

A survey was structured according to the aforementioned narratives. The questionnaire included two content blocks. Firstly, an initial set of socio-demographic questions (including ideology and party identification) were asked. Secondly, each narrative was presented and followed with a set of questions: 1) if the respondent had ever heard (seen or read) the narrative before (binary response), 2) whether they agreed with the statement (measured in a Likert scale from 1 to 5), 3) in case of previous exposure to the narrative, which media or platform had they heard (seen or read) it from, and finally, 4) whether they had ever shared content related to the narrative in their profiles. The order of the narratives in the questionnaires was randomized to avoid order bias. The survey was launched immediately after the election (March 4th), in order to ensure respondents had fresh memories of the electoral campaign and the information they had received.

The survey lasted until March 16th, collecting responses from 1650 unique participants. The survey was self-administered online using a specialized survey company, GESOP, in charge of administering the survey. As the disinformation narratives were of national reach, rather than regional, the universe is the Spanish adult population (ages between 18 and 74). The sample was stratified by age, gender and size of the municipality of residence. The data was later weighted to correctly represent the population under study. The margin of error is $\pm 3.0\%$ for a confidence level of 95% and $p=q=0.5$.

3.3. Operationalization and analysis techniques

The operationalization process for this study involves several key concepts, each with specific dimensions, indicators, and variables. Reach is measured through the dimension of previous exposure to content, with the indicator being whether respondents had ever heard about the topic before, operationalized as the variable Exposure. Belief in a narrative is captured through the dimension of agreement, where respondents are asked to what extent they believe a narrative to be true, using a Likert scale from 1 (not true) to 5 (true). This scale was recoded into three categories: 1-2 as “not true,” 3 as “neutral,” and 4-5 as “true,” resulting in the variable Agreement. Ideology is measured via self-identification on a political spectrum, where respondents place themselves on a scale from 1 (extreme left) to 7 (extreme right), which was recoded into three groups: 1-2 as “left,” 3-5 as “center,” and 6-7 as “right,” creating the variable Ideology. Lastly, the concept of Topic refers to the content of the narrative, represented by eight different narratives and operationalized as the variable Narrative.

Since the variables in this study are categorical, the analysis uses tools suited to this type of data. First, bivariate crosstabs with Chi-squared tests are applied to assess associations between variables, and post-hoc Cramér's V tests are conducted to determine the strength of these associations. Second, binomial logistic regressions are used to model relationships between categorical dependent variables and their predictors, complemented by graphical representations of predicted means. Finally, Marascuilo post-hoc tests are employed to compare multiple proportions when significant differences are identified.

4. Results

Our first hypothesis proposed “Disinformation narratives have a limited reach among the public, with similar low percentages of reach among the different narratives”. The first results do not

confirm this hypothesis, pointing towards a major spread of some of the studied disinformation narratives, albeit with important differences between them. Only two narratives were heard by less than 40% of respondents. Two narratives had been previously seen or heard by more than 70% of respondents and three other narratives had been previously presented to approximately 50% of respondents.

The two narratives with lower levels of spread are “Posters banning” (N2) and “Manipulated elections” (N1). These are more partisan than ideological, as they refer to a possible prejudice of one party during the electoral campaign or when counting the votes. Although their spread level is not as high as the other narratives under study, their spread cannot be dismissed nor disregarded.

Those narratives with a spread level ranging from 43.4 to 52.8% are N6 (Public health system), N5 (Islam in schools), N3 (Health Minister), and N4 (Crime and immigration). Except for N3, all are narratives that refer to controversial issues in Catalan society and in the platforms of the main parties. N5 and N4 are related to the debate around immigration, while N6 is related to the Catalan independence debate. N3 is more contextual, about a rumor that spread during the electoral campaign.

Finally, the two narratives that have spread levels above 70% are Pablo Hasél (N8) and economic assistance (N7). The one referred to Pablo Hasél, as explained, occurred during the electoral campaign context, while N7 is about COVID-19 effects on the economy and the supposed lack of economic assistance of the central government. It was an element of discussion during the electoral campaign, mixing the pro-independence debate with the economic one.

The second hypothesis proposes that those citizens having been exposed to a narrative before the survey are more likely to express agreement with it than those not previously exposed. The analytical strategy used to address this hypothesis is twofold. First, a series of bivariate chi2 tests is performed, where the dependent variable is the credibility given to the narrative (believing, being neutral, or not believing in it), and the independent variable is having been exposed to it before. In all cases, the variables hold a statistically significant relationship (see annex for complete results). Cramer’s V values are used to evaluate the strength of the successive bivariate associations. Table 1 synthesises the results for all eight narratives, ranging from moderate in the mildest case (Cramer’s V for narrative seven is 0.241) to very strong (Cramer’s V for narrative six is 0.412).

Table 1. Association between exposure and agreement

Narrative	Topic	believes/ total	believes/ exposed	Cramer’s V	Chi2 test p-value
1	Manipulated elections	17.0%	33.8%	0.323	0.000
2	Posters banning	13.6%	33.6%	0.357	0.000
3	Health minister	30.8%	40.1%	0.279	0.000
4	Crime and immigration	34.6%	46.7%	0.311	0.000
5	Islam in schools	30.0%	44.4%	0.338	0.000
6	Public health system	52.3%	70.6%	0.412	0.000
7	Economic assistance	49.0%	54.6%	0.241	0.000
8	Pablo Hasél	40.8%	46.6%	0.289	0.000

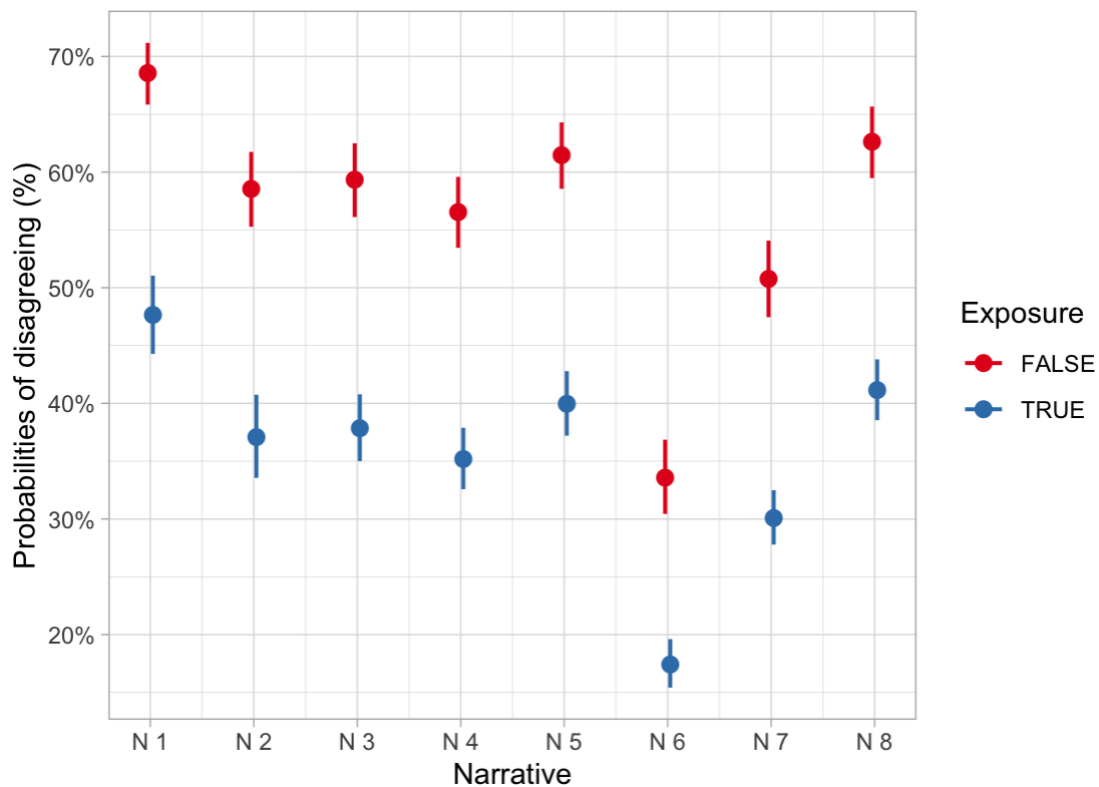
Note: degrees of freedom = 2

Source: own elaboration.

Second, a generalized linear model has been fit, where the dependent variable is whether the respondent disagrees or not with each Narrative. For this particular contrast, disagreement was deemed a more clear-cut position than agreement, so it has been taken as the reference category for the model, even though the hypothesis was formulated in terms of agreement. The data of the model was re-structured into long format, so that Narratives could be compared amongst them, by including “Narrative” as a control variable. Previous exposure is used as a predictor. See Table A1 in the Annex for a table with the summary of the model.

Figure 1 presents the predicted probabilities of disagreeing with each Narrative after controlling for previous exposure. All narratives show a similar pattern to this effect: probabilities of agreeing with any given Narrative are lower when participants have not been previously exposed to its message. Or in other words, and in a more literal reading of Figure 1, previous exposure reduces the probabilities of disagreeing with any given Narrative, thus reinforcing the evidence that supports the repetition bias effect hypothesis.

Figure 1. Predicted probabilities of expressing disagreement with Narratives after controlling by previous exposure

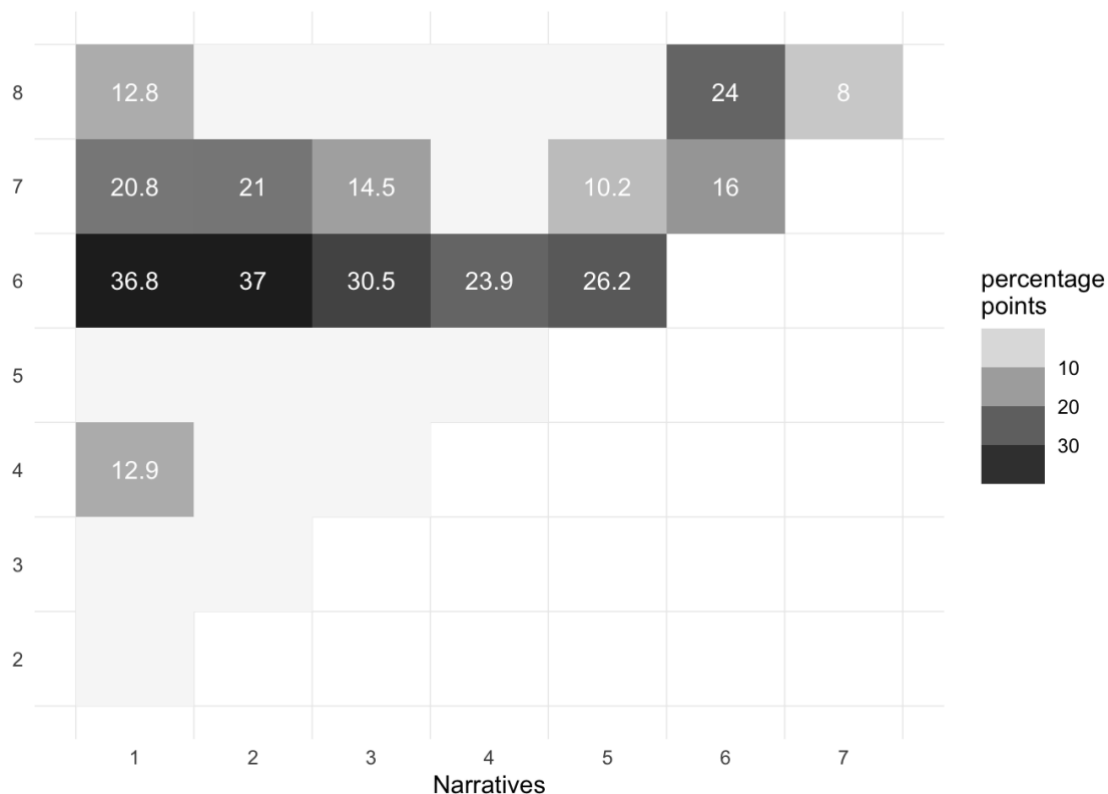


Source: own elaboration.

Despite previous exposure being consistently associated with agreement with false Narratives, the available data does not allow differentiating between competing causal explanations for such results. On the one hand, *repetition* of a message might be considered as a source of credibility (repetition bias hypothesis). On the other hand, these particular messages might have a *selection bias*, reaching a larger proportion of people already primed for believing in them. Further research would be needed in order to differentiate between these alternative causal explanations.

The third hypothesis suggests that the effect of having been exposed to the narrative beforehand would have similar effects across narratives, or, in other words, that the topic of the narrative would be less relevant than exposure. A Marascuilo post-hoc multiple proportions test is performed for every pair of proportions, where the null hypothesis is that the proportions (of people who have been previously exposed and believe the narrative over the total number of people previously exposed) are equivalent. The test results (presented in Table A2 in the annex) suggest that this is not true: even though the exposure effect is significant for all narratives, it is stronger for some narratives. Particularly, narratives 4 (Crime and immigration) and 5 (Islam in schools), which meet at the expression of xenophobic beliefs, have a higher exposure effect, while narratives 6 (Public health system) and 7 (Economic assistance), which share a sense of negligence against Catalonia by the central Spanish government, also show a higher tendency to be held among those having been previously exposed. Figure 2 represents such differences over a heatmap only for those pairs of narratives holding statistically significant differences. Figure 2 can be read as follows: the proportion of respondents who have been previously exposed to Narrative 8 and agree with it has a 12.8 percentage point difference with the proportion of respondents who have been previously exposed to Narrative 1 and believe it; and this difference is statistically significant.

Figure 2. difference (percentage points) in the proportion of believing individuals over total exposed, between pairs of narratives

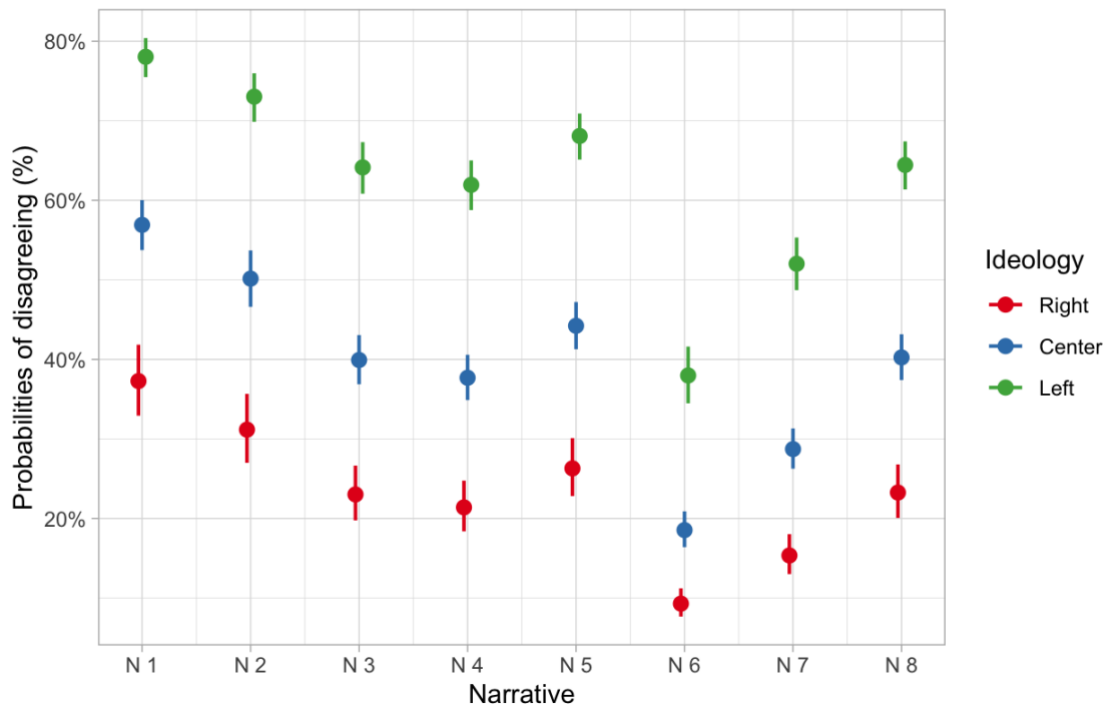


Source: own elaboration.

The fourth hypothesis proposed that ideology would play a significant role in shaping if disinformation narratives are agreed with, as a proxy for trust. A series of bivariate Chi2 analyses have been performed to test this hypothesis, and results are summarized in Table 2. Ideological identification is significantly associated with believing in all the narratives under

study, thus the null hypothesis (ideology plays no role in belief) can be rejected. The strength of these associations (as measured by Cramer's V) is considerably lower than the exposure effect previously seen for all Narratives. Although the strength of associations between ideology and belief ranges from weak to moderate (0.085 to 0.396), these values are typical for survey-based social research involving categorical variables with more than two groups (Rea & Parker, 1992). Moreover, all associations are statistically significant, and the inclusion of the centrist group, which consistently shows intermediate agreement levels, may account for the dampening of association strength.

Figure 3. Predicted probabilities of disagreeing with a Narrative after controlling by ideology



Source: own elaboration.

While the topic under discussion did not seem determinant in the relationship between previous knowledge and belief in the narrative (H3), the relationship between ideology and belief seems more susceptible to the topic of discussion, confirming our fifth hypothesis (H5). Figure 3 illustrates that self-identifying as left-wing consistently increases the probability of rejecting the veracity of all narratives under study. Across all eight narratives, left-wing respondents show the highest predicted probabilities of disagreement, followed by center, and then right-wing respondents. Notably, the gap between ideological groups varies by narrative, indicating that the effect of ideology on belief is not uniform across all topics. This suggests that the interaction between ideological orientation and the content of the narratives plays a meaningful role in shaping responses. In other words, to the question “Is the effect of ideology on belief subject to the nature of the narrative?”, the evidence in Figure 3 supports a clear yes: some narratives elicit greater ideological divergence in belief than others.

Table 2. Association between Ideology and belief of narratives

Narrative	Topic	believes / right	believes / left	Cramer's V	p-value
1	Manipulated elections	46.4%	8.5%	0.268	0.000
2	Posters banning	32.5%	9.3%	0.141	0.000
3	Health minister	55.8%	18.3%	0.154	0.000
4	Crime and immigration	68.0%	13.6%	0.256	0.000
5	Islam in schools	56.7%	12.7%	0.259	0.000
6	Public health system	48.7%	61.4%	0.085	0.001
7	Economic assistance	70.9%	31.1%	0.170	0.000
8	Pablo Hasél	81.1%	11.0%	0.396	0.000

Note: degrees of freedom = 4

Source: own elaboration.

Finally, hypothesis 6 states that “having been previously exposed to the narrative, together with ideology, greatly determine if citizens agree with the disinformation content”. Table A3 in the Annex shows the results of different logistic regressions in which agreeing with the narrative acts as the dependent variable, while Ideology and Exposure act as predictors or independent variables. The first conclusion that can be drawn is that previous exposure and ideology are both relevant factors to shape belief in misleading content, although with different explanatory power depending on the content of the narrative. In combination, previous exposure and ideology explain between 3% (minimum) and 17% (maximum) of belief in the different Narratives according to the pseudo-R squared (Tjur) measures.

However, the relevance of each one of these factors differs depending on the nature of disinformation narratives. Some of them appear to be more ideology-related: they address topics that are easier to have a polarizing effect in relation with the left-right political cleavage. This is the case for N3 and N4, in which ideology is the only statistically significant factor. And to a lesser extent, for narratives 1, 2, 5 and 8. In those cases, both exposure and ideology are relevant, although ideology shows higher odds ratios, especially among right-wing participants. In contrast, for narratives 6, and to a lesser extent 7, previous exposure is more decisive than ideological identification or belief. Narrative 6 is the only one with a significant intercept above 1, suggesting that this narrative is more widely held across the political spectrum, and thus ideology plays a lesser role. In fact, having been exposed while identifying as right-wing diminishes the probabilities of believing in the narrative, suggesting it is more widely held among left leaning respondents.

Hence, evidence partially supports hypothesis 6. Previous exposure and ideological identification play a significant role in the public's agreement with disinformation narratives, with varying importance between the two factors. This might respond, at least in part, to the content of the narrative and its ideological alignment on the current political cleavages. As a consequence, disinformation might affect different target groups in a diverse manner, as not all narratives are aimed at the same societal collectives.

5. Discussion

Our research aims to contribute to ongoing debates about the real spread and impact of disinformation. As noted in the literature review, existing studies have offered diverging answers to these questions (Zannettou et al., 2019a), in part due to differing methodological and conceptual approaches. Our results must therefore be understood within the specific framework we have adopted: a holistic, narrative-based approach. Unlike most prior studies,

which focus on isolated platforms, individual formats, or viral events, we conceptualize disinformation as structured around broader narratives that can be traced across various types of misleading content. Rather than analyzing disinformation on a single platform or in a specific format, we focus on the shared underlying narratives that emerge and persist across different media. This perspective allows us to account for the participatory and distributed nature of disinformation, as emphasized by Tandoc et al. (2017), acknowledging that once a narrative enters the information ecosystem, it can be reshaped, amplified, or challenged by a variety of actors—from citizens to news media to political elites.

Narratives can be produced by certain actors and disseminated mainly in a certain platform. But once this is done, there is no control about how the narrative will spread: are citizens going to reshape or share related content? Are news media or political representatives going to amplify the narrative? The assumption of narratives to structure our research allows us to test the extent to which narratives penetrate public opinion, disregarding their original producer or spreading patterns. It is an approach that, like any other, has some limitations, but that allows us to research the real spread of disinformation in a particular society. The fact that our results indicate a greater spread of disinformation than in most previous platform-based studies (see here Arif et al., 2018; Broniatowski et al., 2018; Hussain et al., 2018) needs to be understood in this conceptual context. Most of the narratives under study were received by more than 50% of respondents, with just two of them with reach levels lower than 25%. The time-frame of the study, an electoral campaign, is also relevant here. During elections citizens are normally more attentive to news and information, not just as consumers but also commenting, sharing etc. Further research out of election time needs to be conducted to assess the reach of disinformation narratives during times of lower attention.

Secondly, this research has adopted impact as a guiding concept. Understood as the capacity of a certain narrative to be trusted or believed. As seen, most narratives did not manage to be accepted by the broader public. Just two narratives got close to being accepted by half of respondents (N6 with 48% and N7 with 44%), while the others were around 20% or even lower (N1 with 12% and N2, 10%). This is good news, the percentage of citizens that believe the narratives is smaller than the percentage that have received them. However, this is an optimistic point of view. Our research has proved that being exposed to disinformation narratives does have a pernicious effect: those exposed to disinformation content before are more likely to believe it. In this sense, our results go in line with previous studies based on experimental design, in which exposure to disinformation content proved to be relevant in shaping participants' positions (Richter, 2017), opposing to results of studies based on social media datasets, which mostly stated otherwise (Spangher et al., 2018; Zannettou et al., 2018). Our approach allows us to test impact moving beyond a particular piece of disinformation content, assessing disinformation capacity to shape public opinion. However, there are two factors that we need to consider in future papers. These are, the effect of repetition and the format of exposure. We do know that citizens exposed to news and messages through time and through different formats are more likely to shape their positions accordingly (Prior, 2005; Guess, Nyhan, & Reifler, 2020). Once we have confirmed the "received before" effect, it would be relevant to assess the importance of the "repetition effect". This is, if disinformation narratives are more likely to be believed if citizens are exposed to them repeatedly and through different formats (through news media, social media, politicians' speeches, etc.).

Thirdly, one of the most striking findings of our study is the clear variation in how different disinformation narratives are received depending on the ideological orientation of

individuals. Some narratives—particularly those involving crime, immigration, or national identity—appear to activate stronger ideological responses, while others related to public services or health are less ideologically polarized. This suggests that disinformation does not affect society uniformly; its impact is filtered through pre-existing belief systems, and some narrative structures may be more “ideologically resonant” than others. This insight has important implications. It indicates that disinformation’s influence is not just a function of virality or exposure, but also of how ideologically compatible the narrative is with different groups’ worldviews. This opens a critical avenue for future research: to investigate what features—semantic, emotional, or moral—make certain narratives more persuasive or polarizing for specific ideological audiences.

Furthermore, our results show that right or left-wing positions are also relevant to believe or not believe disinformation narratives. However, the importance of ideology is less important than the “received before” effect, and it is also highly variable depending on the nature or topic of the narrative. Although ideology seems to be relevant for all narratives, its strength differs. There are some narratives related to polarizing topics in which right-left positions are more relevant, while others show significantly less strength. However, despite its interesting results in terms of “received before” effect and the role of ideology in trusting disinformation narratives, our research also shows that there are still uncovered issues that are relevant in shaping citizens’ trust regarding disinformation content. Results in our H6 are highly diverse, pointing towards the fact that other factors might be also relevant here. Furthermore, results for H6 showed that belief in misleading content differs depending on the nature or topic addressed by the disinformation narrative. Future research may address this, for example, by focusing on the role of different spreading formats, such as TV, social media, messaging apps, etc. Or, as pointed out in previous research, by analyzing impact in terms of societal groups, to see if trust on disinformation content differs depending on societal factors such as age, gender etc.

Building on these findings, we suggest that future research could examine the structure and framing of disinformation narratives to better understand their differential impact. For instance, studies could analyze whether narratives framed as moral threats, as collective grievances, or as identity-based conflicts are more likely to polarize belief across ideological lines. The recent work by Henkel (2021) on “destructive storytelling” points toward this direction, suggesting that certain narrative archetypes may be more effective in undermining social trust or reinforcing in-group/out-group divisions. Similarly, experimental and computational studies could explore how narrative features—such as emotional tone, protagonist-antagonist framing, or repetition—interact with ideological predispositions. This would help identify the “high-risk” narratives most likely to produce division or belief distortion. Finally, this line of inquiry is essential for developing more complex counter-disinformation strategies. Rather than assuming a one-size-fits-all model, interventions might need to be tailored to specific narrative types and audience ideologies to be effective.

Annex

Tables from Annex can be accessed through this link:
<https://figshare.com/s/4f9ae7a905c648dfe77b>

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