Media crisis and disinformation: the participation of digital newspapers in the dissemination of a denialist hoax

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Abstract

Disinformation is a communicative phenomenon that frequently feeds on political or electoral topics, as well as other aspects of our reality. This research takes as a case study the coverage given by the Spanish digital media to a hoax broadcast during the Filomena storm in 2021 that insisted that the snow was plastic. The purpose of this work is to analyze the instrumentalization of fake information as an expression of the information media crisis in the current context of disinformation. We set out four specific objectives: (SO1) to study the spread of the hoax through the media, (SO2) to analyze the construction of headlines in the news pieces, (SO3) to investigate the treatment of the hoax in the content of the pieces, and (SO4) to analyze the sources used in the pieces. To reflect on this phenomenon, we propose a three-dimensional model (structural, economic, and pragmatic) aimed at clarifying the relationship between the logic of the spread of hoaxes on the Internet and the role played by traditional media in their diffusion. The methodology used combines workflow techniques of *digital methods* with quantitative and content analyses. The results reveal the appropriation of certain communication strategies by digital newspapers aimed at obtaining visits. We conclude that the Spanish media, by adapting to the dynamics of disinformation irresponsibly encouraged by the attention economy, subscribe to and reinforce the crisis of credibility faced by the media ecosystem.

Keywords

Media crisis; Disinformation; Hoaxes; Denialists; Attention economics; News coverage; Science; Social networks; Social media; Three-dimensional study model.

1. Introduction

Recent literature on communication has paid central attention to disinformation strategies, especially because of their importance in certain international (**Howard**; **Woolley**; **Calo**, 2018) and national (**Cervi**; **Carrillo-Andrade**, 2019) political processes. Deceptions, lies, and hoaxes, in short, are part of a particular context (**Weidner**; **Beuk**; **Bal**, 2020) characterized by the strengthening of the Internet as a communicative scenario, the extension of a climate of political polarization, and the crisis suffered by the traditional media (**McChesney**, 2007). These factors, together with the multiplicity of actors and the rapid distribution of information (**Pierri**; **Piccardi**; **Ceri**, 2020), have favored traditional media coverage of viralizable content (**Tambini**, 2017). As a consequence, the boundaries between true and false have become blurred (**Bennett**; **Livingston**, 2018) and the role of media as reliable sources of information is questioned (**Singer**, 2018).

We propose herein a model that can function as an analytical instrument to approach phenomena related to the media and the crisis of disinformation. This consists of three dimensions:

- Structural, describing how the specific infrastructure of the Web affects the circulation of content and the actors involved in its creation (**Gray**; **Bounegru**; **Venturini**, 2020).
- Economic, addressing the business model of the Internet and its transposition to the media (**Bakir**; **McStay**, 2018).
- Pragmatic, examining the transformation of journalistic routines into an ecosystem based on over-information (**Himma-Kadakas**, 2017).

The usefulness of this model is verified by studying a specific case, viz. a hoax disseminated during the Filomena storm at the beginning of 2021, stating that the snow was made of plastic.

The original material for the hoax was a video in which a woman tried to burn a snowball that turned black without melting[1] (Figure 1). Despite the apparent irrelevance of this content, various media (regional and national) and news agencies contributed to the spread of this message. An analysis of the media coverage of this hoax allows us to address our main objective: to explain the instrumentalization of false information as an expression of the media crisis in the current context of disinformation, at the structural, economic, and pragmatic levels. To do so, we propose four specific objectives:

(SO1) To study the lifecycle of the circulation of the hoax in the media.

(SO2) To analyze the construction of the headlines of the news pieces.

(SO3) To investigate the treatment of the hoax in the body of the piece.

(SO4) To analyze the sources used in the pieces.

Figure 1. Shot from the video related to the hoax on plastic snow.
https://www.dailymotion.com/video/x7ympk2

2. The reputational and referential crisis of the media and its relationship with disinformation

The recent years have seen several events that indicate the existence of a crisis in the traditional media, which have progressively lost their central role in transmitting news (**Himma-Kadakas**, 2017). The causes of this decline in significance include:

- A lack of transparency (**De-la-Fuente** *et al.*, 2015)
- A trend towards the use of alarmist and sensationalist approaches in the treatment of the news (**Costa-Sánchez**; **López-García**, 2020; **Núñez-Gómez** *et al.*, 2020)
- A loss of trust of users in their content (**Flew**, 2019)
- A certain focus on constantly exalting the most mundane aspects of social reality (**Casey** *et al.*, 2008), to the detriment of correctly contextualized analyses

Against this background, the profound technological transformation undergone by communication structures and the emergence of a new paradigm of complexity can also be observed (**Williams**; **Delli-Carpini**, 2011). In the strictly structural sense, this coexistence between conventional and digital media, which feed back on each other, has become known as the hybrid system (**Chadwick**, 2013). At the same time, the media coexist on the Internet with multiple actors who create and disseminate information, side-lining the media as mediators (**Flew**, 2019).

News coverage of events has been altered on the Internet along three dimensions:

- Firstly, journalistic routines are increasingly connected to the digital world, where information overload implies a greater risk of information leaks (**Himma-Kadakas**, 2017);
- Secondly, journalistic practices are also reproduced by users (**García-Galera**; **Valdivia**, 2014);
- Finally, newly appearing unpublished phenomena such as fake news or hoaxes have found in social networks an ideal breeding ground for their dissemination, given their rapid viralization across these networks (**Pierri**; **Piccardi**; **Ceri**, 2020).

> We propose three dimensions that can function as analytical instruments to facilitate a holistic approach to phenomena related to the media in the digital environment

Al-Rawi expresses the challenge that these issues pose to the media as follows:

> "Journalists follow certain standardized and centralized rules in gatekeeping in order to make sense of the world and provide an overview of 'important' events that they believe their readers seek and need. This, indeed, partly determines the news selection process and the way traditional news organizations are shaped. In relation to social media, there is a clear noncentralization in the way users post and share information" (**Al-Rawi**, 2019, p. 689).

Recently, these events have become a focus of academic interest: On the one hand, due to their relevance as factors necessary to understand current disinformation processes (**Giglietto** *et al.*, 2019) and, on the other hand, due to their relationship with the media crisis and its role in society (**Del-Hoyo-Hurtado**; **García-Galera**; **Blanco-Alfonso**, 2020), these reflections are linked to the historical debate about the blurred border between information (partisan, satirical, sensationalist, etc.) and disinformation itself (**Molina** *et al.*, 2019). Even the notion of "real news" itself can thus be questioned as an idealized precept of journalistic work that is disconnected from the current media landscape (**Carrera**, 2018; **Mourão**; **Robertson**, 2019).

Meanwhile, the Internet redefines and redimensions debates around disinformation as a manifestation of the crisis in journalism. The media feed on the Internet and act as amplifiers of what happens there. In turn, media content is disseminated on social networks, in a process of information acceleration that encourages the dissemination of false information (**Pierri**; **Piccardi**; **Ceri**, 2020; **Zhao** *et al.*, 2020) and facilitates a decontextualization of news content (**Graves**, 2017). Disinformation flows are thus distributed in a holistic and organic way between multiple accounts and platforms (**Decker**, 2019) that include social networks and instant messaging chats as well as media websites (**Wardle**, 2018).

Furthermore, exposure to disinformation does not necessarily provide readers with a more critical view of the phenomenon. **Effron** and **Raj** (2019) state that repeatedly finding fake news headlines on social networks can reduce the moral condemnation of those who publish them and thereby decrease the tendency to block such content and increase the inclination to share it. At the same time, although their origin is usually unknown, hoaxes often receive news coverage from traditional media, which results in an amplification of facts and interpretations that would be rejected in case of more effective controls by information professionals (**Bennett**; **Livingston**, 2018). Thus, the Internet provides a structure in which hoaxes can coexist with journalistic production in a continuous flow of information that results in saturation of citizens and their exhaustion when it comes to distinguishing between truth or falsehood, when such information is not believed for partisan and ideological reasons (**Bharali**; **Goswami**, 2018).

These contingencies suggest that fact checking has been relegated to second place, both by nonjournalist producers and by the recipients of the information, in favor of a perspective of ideological reinforcement and emotional appeal (**Fourney** *et al.*, 2017; **Weidner**; **Beuk**; **Bal**, 2020). In his approach to the functioning of social networks, **Pariser** (2011) describes the contribution of the technological architecture itself to this type of interaction with content. This structural fact is compounded by a sociopolitical malaise that also supposes a fragmentation of the public sphere (**McChesney**, 2007).

Both of these factors, i.e., structural and political, also facilitate the monetization of journalistic content produced as part of the economy of emotions (**Bakir**; **McStay**, 2018; **Guo**, 2020). A focus on certain content translates into an increase in visits and viewing time, which in turn implies higher advertising revenue. **Tambini** (2017) warns that this business model based on interactions generates a media scenario that encourages the distribution of information that is more likely to go viral, even when these are rumors. Additionally, the body of the news itself is structured such that it is more easily indexable by Internet search engines (**Graves**; **Anderson**, 2020). The possibility of quantifying the interaction with certain content is another of the inherent factors of the Internet infrastructure that favors the design of advertisements that appear in the media (**Gray**; **Bounegru**; **Venturini**, 2020). Thanks to this, advertisers, on whom the profits of the media depend to a large extent, can determine the impact of their ads.

In this way,

> "The combination of current (online) journalism practices and the decrease in audience skepticism have laid the foundations for the publication of alternative facts and fake news" (**Himma-Kadakas**, 2017, p. 28).

This leads to the consideration of post-truth as a key notion to understand the current state of the media (**Del-Fresno-García**, 2019; **Clayton** *et al.*, 2020) since the objectivity of journalistic facts and the quality of the information is openly questioned (**Graves**, 2017; **Molina** *et al.*, 2019).

This crisis of confidence occurs in the context of a transition from a system of morally validated authorities to a multipolar information system (**Flew**, 2019): the media cease to be reliable sources of information; as they coexist with the rest of the actors that produce and disseminate information via social networks, they are no longer perceived as information sources (**Weidner**;

> In these cases, and especially due to the type of coverage carried out, a blurred border between information (satirical or sensationalist in this case) and disinformation is confirmed

Beuk; **Bal**, 2020). This disengagement of citizens with the mass media has favored the spread of partisan, alternative information channels that mobilize citizens towards radical positions, mainly on the Right (**Bennett**; **Livingston**, 2018). Although the fact-checking phenomenon is framed within essentially journalistic practices, it reinforces the idea of the subsidiary role of the media in relation to this new situation:

> "In a way, fact-checking is nothing more than 'good journalism', based on fundamental principles such as truthfulness and impartiality, and basic practices such as verification and clarity of presentation. But fact-checkers challenge old habits by adding a judgement on claims and proofs" (**Singer**, 2018, p. 1070).

In the current, post-truth context, fact-checking is presented as an essential verification system for some. However, it is not without its limitations and controversies (**Shao** *et al.*, 2018; **Dias**; **Sippitt**, 2020). Some research suggests that its use indirectly contributes to the spread of hoaxes:

> "If a reader has not encountered a given false claim before, these corrections can familiarize them with misinformation that they were not yet in contact with" (**Ecker** *et al.*, 2020, p. 37).

According to the views presented in these studies, one can ask whether what this new type of verified information really achieves is to confirm the previous convictions of the users (**Nyhan** *et al.*, 2020) and increase the effects of informational polarization (**Wardle**, 2018).

Finally, it is worth highlighting reflections on the difficulties involved in delimiting the keys to this new informative dynamics (**Graves**; **Anderson**, 2020; **Gray**; **Bounegru**; **Venturini**, 2020). In this sense, three dimensions of analysis (structural, economic, and pragmatic) are chosen herein to develop an adequate instrument to address the logic of the media in the current context of disinformation.

3. Methodology

The methodology used in this research combines techniques of the workflow of *digital methods* (**Rogers**, 2013; 2019) with traditional methodologies such as quantitative and content analyses. Specifically, the methodological process consists of four specific phases.

In the first place, to evaluate the media coverage of the plastic snow hoax, we compiled all pieces that mentioned this topic in the Spanish digital media. To do this, we searched for "nieve Y plástico" ["snow AND plastic"] in the digital newspaper library *MyNews*, which indexed 684 media at that time. The search period was from 6 to 21 January 2021.

Table 1. Variables analyzed in this study.

Content variables	
1. Treatment of the hoax in the headline	a) Supporting the hoax b) Refuting the hoax c) Only mentioning the hoax d) No mentions
2. Treatment of the hoax in the body of the piece	a) Refuting the hoax thesis: It only refers to the hoax studied and argues about it. b) Supporting the thesis: Supports and disseminates the thesis that the "snow is plastic." c) Balanced: Presents arguments for and against. d) Metadiscursive: A reflection is made on disinformation, referring to this hoax as one more example but not focusing on its verification.
3. Presence of arguments (in case of pieces denying the hoax)	a) Presents arguments b) No arguments are included
Formal variables	
4. Mode of reference to the hoax (dichotomous variables):	
4.1. Includes the original video	a) Yes b) No
4.2. Includes a link	a) Yes b) No
4.3. Makes textual reference	a) Yes b) No
4.4. Makes visual reference (photos)	a) Yes b) No
5. Publication date of the piece	dd/mm/yyyy - hh:mm

Although the publication date of the viral video was 9 January, we expanded the range of dates in case this topic had been introduced previously in the media and to be able to collect echoes of the video in the following days.

Duplicates and unrelated content were then eliminated from the corpus, reducing the initial volume of 317 to 48 units. Using this corpus, we carried out an analysis of the frequency of publication of pieces, to identify the cycle of circulation of the hoax in the media. We also carried out a content analysis. To do this, a codebook was created, and we applied a pretest to evaluate the agreement between the coders (Krippendorff's alpha = 0.91). The variables analyzed are presented in Table 1.

Thirdly, to analyze the impact of these contents on social networks, reactions to them on *Facebook* and *Twitter* were collected through *SharedCount* and *Facepager* (**Jünger**; **Keyling**, 2019). Specifically, we quantitatively analyzed the presence of posts on *Facebook* and tweets on *Twitter* that included links to the pieces, as well as the engagement (shares, comments, reactions, likes, and retweets) they produced.

Finally, to identify the network constructed by the hyperlinks included in the body of the text (with the aim of evaluating the network of references provided by the content covering the hoax), we extracted these links using *Link Ripper*. After cleaning the links and retaining only the external ones that were present in the body of the text, we converted that data into a graph using *Table2Net* and *Gephi* (**Bastian**; **Heymann**; **Jacomy**, 2009). In this way, it was possible to observe more clearly whether there were common sources of reference among the media.

4. Results

4.1. The circulation of the hoax in the media and its impact on social networks

The data reveal the short life of the hoax (Figure 2). The majority of the pieces were concentrated in the days following its publication, with 32 (65%) dating from the first three days after the video was published (10–12 January). There were no previous references to it in the press, thus we identified 9 January as the start date for the spread of the hoax. Subsequently, we verified a decrease in journalistic pieces from 12 January until their disappearance on 21 January. At a qualitative level, this reduction in the frequency of appearances of the hoax resulted in its tangential mention in later pieces. That is, while at first the media were dedicated to pointing out and denying the information, they later presented the reactions of public figures about it, or included it in a compendium of hoaxes related to the Filomena storm, for example:

"Filomena's denials: climate change and denial as frontiers of the future" (*Cambio 16*).

In the same vein, one day after the publication of the hoax video on 10 January, two pieces appeared where the thesis was supported in the body of the article. Subsequently, only on 18 January, we detected one that was limited to reporting another, similar case of denialism:

"The 'video magician' from Ourense that turns Madrid's snow into plastic" (*La Región*).

Thus, as we see below, the dissemination of the denial video as a news event turned out to be brief, while the efforts of the media focused on denying, ironizing, and collecting the reactions that it provoked.

Despite the short lifecycle of the hoax, it was reported by the media on several occasions. The medium with the most publications was *20 minutos*, with five pieces published over twelve days. The first of them limited itself to reporting on the hoax ("A denier assures that the snow from the Filomena storm 'is not real' and burns it with a lighter") and later denied it ("The scientific explanation for why the snow does not melt with a lighter and turns black"). Subsequently, the hoax appeared in other pieces that did not focus on the deception itself but rather framed it within the events of the Filomena storm.

Other media that covered this event on more than one occasion were *Diario crítico* and *Público*, with three pieces, and *El digital Castilla La Mancha*, *El plural*, *La voz de Galicia*, *Mundo deportivo*, and *OK diario*, with two each. The data also in-
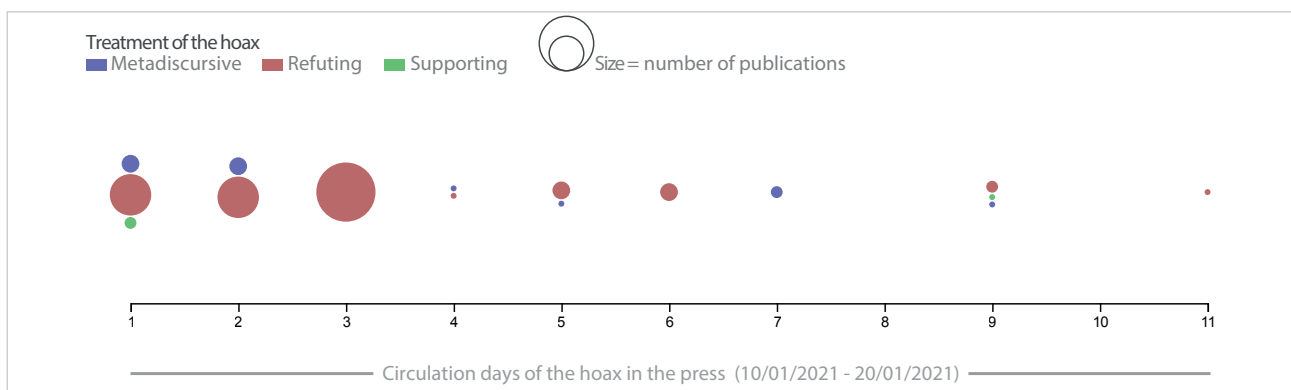

Figure 2. Frequency of journalistic coverage according to the treatment of the hoax, from the origin of its circulation in networks.
Note: No journalistic pieces were found from 6 to 9 January, nor from 20 January. As the circulation of the hoax in the press began on 10 January, the media timeline is presented from this date.

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Reactions	22929	11061	3594	1336	13	16	3	43	0	46
Comments	13419	6192	1289	260	0	3	1	1	0	1
Shares	7227	2948	772	416	5	12	1	12	0	9

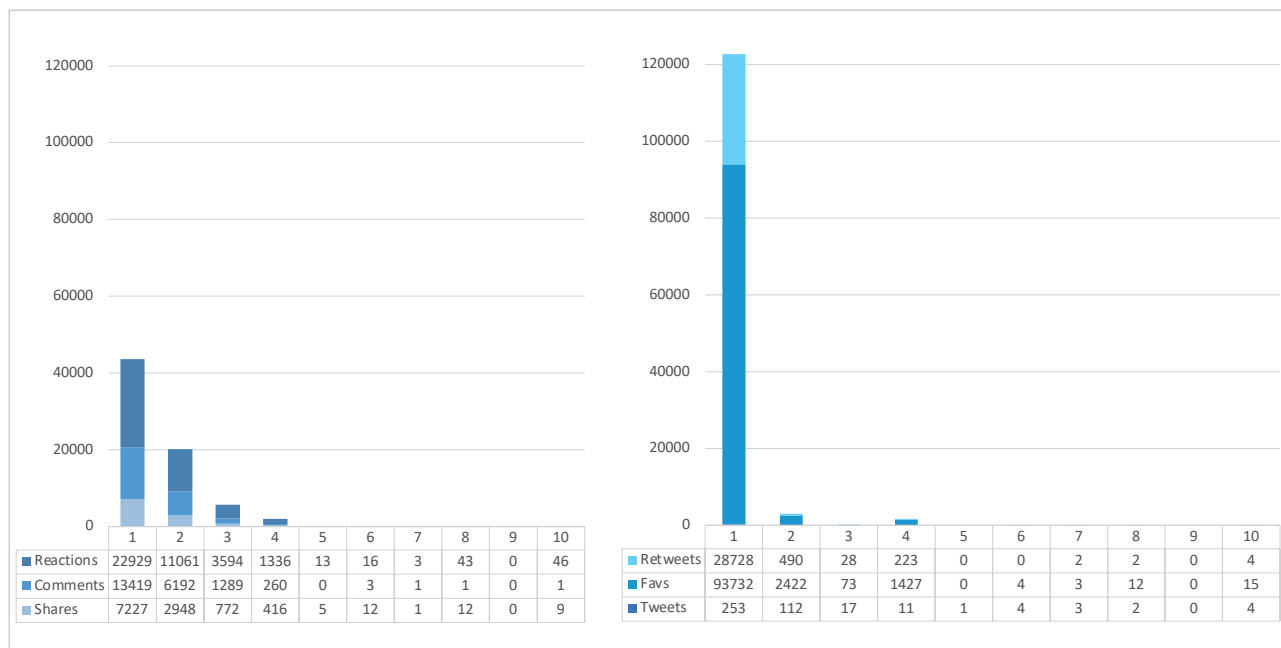| Retweets | 28728 | 490 | 28 | 223 | 0 | 0 | 2 | 2 | 0 | 4 |
| Favs | 93732 | 2422 | 73 | 1427 | 0 | 4 | 3 | 12 | 0 | 15 |
| Tweets | 253 | 112 | 17 | 11 | 1 | 4 | 3 | 2 | 0 | 4 |

Figure 3. Interactions on networks per day during the lifecycle of the hoax in the press (10/01/2021-20/01/2021).
Note: No journalistic pieces were found from 6 to 9 January, nor from 20 January. As the circulation of the hoax in the press began on 10 January, the media timeline is presented from that date.

dicate that a wide range of communication media considered this topic to be newsworthy: from news agencies (*Europa Press*), national press (*El confidencial*, *El país*, and *La vanguardia*), national television and radio stations (*Antena 3*, *Cadena SER*, and *RTVE)*, to regional media (*El diario montañés* and *La voz de Galicia*), and sports newspapers (*As* and *Marca*).

Interactions on social networks also accumulated in the earliest publications (Figure 3). Thus, pieces on January 10 had an average of 7,227 shares, 1,118 comments, and 1,910 reactions on *Facebook* and 21 tweets, 781 favorites, and 239 retweets on *Twitter*. These figures carried on decreasing until 21 January, when the only published denial included 9 shares, 1 comment, and 46 reactions and 4 tweets, 15 favorites, and 4 retweets. Before 9 January there were no references to the hoax on social media.

4.2. Mentions of the hoax in headlines and the correspondence with the text

The analyzed headlines (Table 2) addressed the hoax in 75% of cases, and on seven occasions explicitly mentioned "the snow is plastic":

- "Hoaxocracy – 'The snow is plastic" and other conspiracy 'theories' associated with Filomena" (*Público*)
- "Snow is plastic and other hoaxes related to the Filomena storm" (*La nueva España*)
- "'The snow is plastic' is over: here is the explanation for why it darkens when burned" (*As*)
- "Wolves, the snow is plastic, the flooded Zendal... all the hoaxes following the Filomena storm" (*20 minutos*)

Table 2. Headline types.

Headline type	News	%
Supporting the hoax	5	10.42
Refuting the hoax	24	50.00
Just mentioning it	7	14.58
No mentions	12	25.00
Total	48	100

As in the examples mentioned above, in 50% of the cases, the headline refuted the video, either qualifying it as false or announcing a proof of its refutation, or both options. Such was the case of

"The hoax of the snow that does not burn because it is made of plastic: a scientific explanation" (*Diario crítico*).

Although not in the majority, seven (14.58%) headlines limited themselves to mentioning the hoax, which can be interpreted as descriptions more focused on generating visits than on pointing out the lie. This group includes

- "The video that shows (or doesn't) that Filomena's snow is the work of the Government" (*Público*)
- "Snow deniers outrage social networks with their theories" (*Europa Press*).

Meanwhile, the 12 (25%) headlines that did not mention the hoax turned out to be interpretive pieces or that included the video as an example of more disinformation about Filomena, as in the case of

"Deniers: nonsense in five languages" (*El confidencial*)

Likewise, five (10%) headlines had a structure that promoted the hoax. These headlines were limited to reporting on the denialist video:

"'They are deceiving us': The Arandina who denounces that the snow is plastic" (*Cadena SER*).

They did not offer, however, any value judgment regarding whether the reported fact was true or false. On average, this type of headline had 1,047 shares, 1,890 comments, and 3,086 reactions (*Facebook*) and 22 tweets, 1,018 favorites, and 374 retweets (*Twitter*). The headlines that refuted the hoax had fewer than half the interactions, while those that only mentioned it, or did not mention it, had limited interactions.

Headlines that aimed to promote the hoax, on the other hand, showed a greater capacity for viralization than those in the other categories (Figure 4). In particular, the piece entitled

> "A denier assures that the snow from the Filomena storm 'is not real' and burns it with a lighter" (*20 minutos)*

was found to have the highest number of interactions on social networks: 3,726 shares, 7,044 comments, and 10,370 reactions on *Facebook* and 66 tweets, 4,174 favorites, and 1,759 retweets on *Twitter*.

The vast majority of the pieces (34, 71%) refuted the hoax thesis explicitly in the body of their text (Table 3), while less than a third (11, 23%) focused on a reflection on the topic. In general, such reflection was aimed at implicitly refuting it, discussing the strategies used to create and disseminate such hoaxes. Only three implicitly supported the thesis of the hoax in the body of their text: these pieces were limited to reporting on the video and the denialism present in it, but without questioning it.

Figure 4. Interactions by type of headline.

Table 3. Treatment of the hoax in the body of the piece

Treatment of the hoax in the body of the piece	News items	%
a) Refuting the thesis	34	70.83
b) Supporting the thesis	3	6.25
d) Metadiscursive: reflection on hoaxes	11	22.92
Total	48	100

The relationship between the headlines and the content of the piece (Fig. 5) is noteworthy, particularly where a mismatch was apparent. A total of 22 published pieces only mentioned the hoax in the title but refuted it in the body of their text (71%). Examples of this include:

- "This is what Joaquín Prat thinks of the snow deniers" (*Sport*)
- "Snow deniers outrage social networks with their theories" (*Europa Press*)

In addition, two news items that denied the video promoted it through their headlines, such as

> "Snow deniers: 'They keep fooling us with everything'" (*Mundo deportivo*)

4.3. Arguments against the hoax and references used

Although, as indicated in the previous section, pieces that refuted the denial video were in the majority (71%), not all of them presented justifications for dismantling it. Although pieces frequently argued against the hoax (58%), almost half (42%) did not offer such analytical development. A first group especially presented scientific reasoning, while a second appealed to common sense or classified the video as a conspiracy theory. Such reasoning was absent in particular from pieces that reflected on the hoax, lacking from ten (91%) of them. Among the refutations, however, 27 (79%) pieces did offer some reasoning.

The vast majority of the pieces provided merely verbal references (93%), that is, written descriptions of the hoax. This was the most frequent type of mention, while the two (7%) pieces that did not present such textual mentions were opinion articles where previous knowledge of the hoax was necessary to understand the thread of the plot. One such example is:

> A notable mismatch is identified between the headline and content, because following half of the headlines that defend or replicate the content of the hoax, the body of the text proceeds to deny it
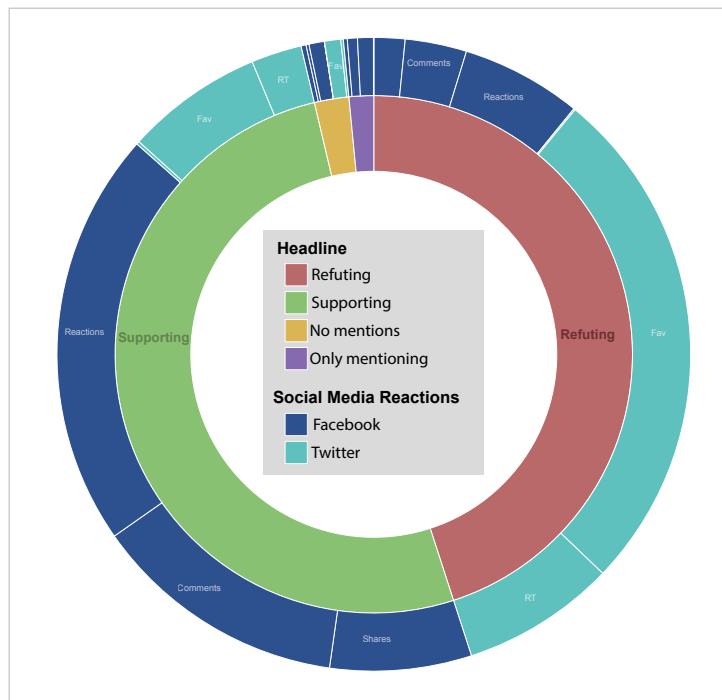
"The complete list of asso-
ciations as absurd as they are
manipulated. If a politician
says such things implying
that they do not have a clue
what they are talking about,
how are we going to be sur-
prised by those who make
snowballs, stick a lighter un-
der them (Sole), and conclu-
de, because of the blackness,
that they are made of plastic
instead of snow" ("Que te
meto con el mechero", *El dia-
rio montañés*).

The other types of references were
used to a lesser degree, whether it
was a link to the video (22%), the
original video (26%), or a still image

Figure 5. Relationship between the headline and the treatment of the hoax in the body of the piece.

from it (28%). There were 29 (59%) pieces that added neither the original video, nor images, nor links to it. Thus, the majority expressly avoided facilitating connection with the original source and thus further dissemination of the hoax beyond the journalistic context where it was found. In this sense, no significant differences were found between the pieces that refuted the thesis versus those that supported it.

Beyond the references to the hoax itself, the media also included links to other external websites (Figure 6). Among the-se, the most prominent was *Twitter*, which was frequently used to attach a thread where a user explained the falsity of the video, for example, in "The explanation for the viral video by the denier who assures that Filomena's snow is plastic" de *La vanguardia*), although they also resorted to the insertion of tweets into the pieces to present the opinion of inter-net users on this denial theory. Another smaller number of pieces cited the *Maldita* fact-checker, which also published information to refute this hoax:

"No, it is not true that the snow is plastic or fake because it does not melt and turn black when it nears a lighter flame."

In "This snow is real, we visually explain you why it does not melt", RTVE also mentioned a similar denial in 2014 publi-shed by the North American website *Snopers*.

The informative website *The conversation* and *Wikipedia* were used to place the hoax within the meteorological phe-

nomenon of the Filomena storm, or the current climate of disinformation. Other media chose to include links to scientific sources, such as the *Universidad de Granada*, the *Consejo Supe-rior de Investigaciones Científicas*, or articles in academic journals. In these cases, the links ei-ther contextualized the hoax or provided infor-mation about the people and centers that had spoken out against it.

5. Discussion

This study allows one to observe the adaptation of the media to the logics of disinformation in the Internet scenario. Specifically, this analysis of the case of the "plastic snow" reveals how the media, in their role as gatekeepers, conside-red it necessary to provide media coverage of such more or less anecdotal or relevant content that went viral on social networks and that they consider will capture the attention of their rea-ders (**Himma-Kadakas**, 2017; **Bennet**; **Livings-ton**, 2018; **Al-Rawi**, 2019).

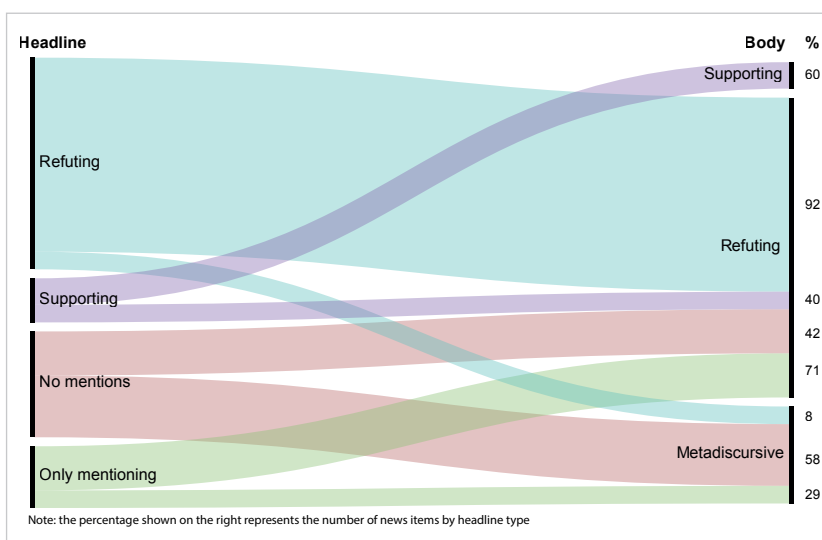With such coverage of a viral claim that snow is not actually snow but plastic, what the media
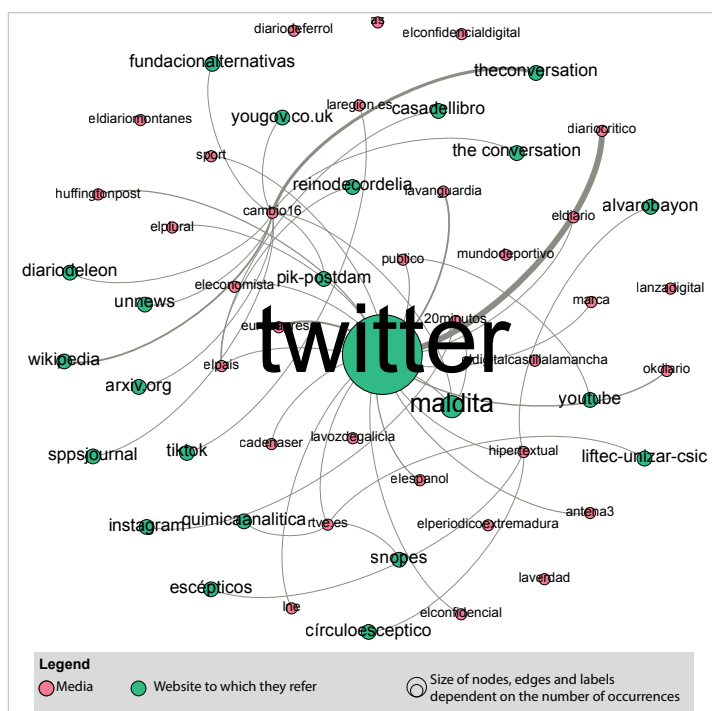

Figure 6. Reference network based on the links in the studied pieces.

also achieves is to amplify this argument and provide direct access to the forums where this hoax is being discussed. This explains why, in these cases, there is a blurred border between the information (satirical or sensationalist in this case) and disinformation provided by journalistic media (**Molina** *et al.*, 2019). The main lifecycle of the circulation of the hoax in the media (SO1) was three days, although pieces appeared sporadically up to eleven days after the viralization of the video (Figure 1). However, when focusing on the reactions of the audience to these pieces, the lifecycle is reduced to just the first and second days (Figure 2). The audience on networks stops reacting massively from the second day after publication, and the interactions become irrelevant from the fourth day. Such pieces are thus created to take advantage of attention on social networks and, as such, their media and attention lifecycles end quickly.

The coverage of this viral video in headlines (SO2), the most widely (and sometimes only) read journalistic content, was received differently on networks depending on their approach. Headlines that promoted the hoax were the most successful in terms of the number of reactions on networks. This is not in itself surprising, as these headlines were built to achieve this. Following the concept of clickbait and responding to a particular economic model, they thus fulfilled their function of attracting visits and generating reactions by the public (**Tambini**, 2017; **Bakir**; **McStay**, 2018; **Guo**, 2020). However, it is interesting to point out that, while headlines that promoted the hoax were better received on *Facebook*, those that denied the argument of the video had more impact on *Twitter* (Figure 3) (SO4). This may be due to the openness and structure of *Twitter*, where the grammar of the platform itself facilitates a discussion of issues through a greater plurality of voices. In fact, most of the pieces that argued against the hoax did so by citing tweets from scientists who had commented on the subject.

Regarding the treatment of the hoax in the body of the pieces by the media (SO3), there was a notable mismatch between the headline and content, since after headlines that defended or replicate the content of the hoax, the text of the article refuted it in half of the cases. This journalistic practice also calls into question the objectivity and reliability of the media (**Graves**, 2017; **Molina** *et al.*, 2019), thereby contributing to a delegitimization of their authority (**Flew**, 2019).

6. Conclusions

The media treatment of the Filomena storm in 2021 confirms that disinformation is not a phenomenon limited only to the electoral or political sphere, as it extends to all strata of social life. In the dissemination and coverage of hoaxes in the analyzed period, there is an underlying context that facilitates the existence of disinformation flows and in which the media play an essential role, both favoring their expansion and promoting understanding of them (Figure 7). Through a case study, this research demonstrates the effectiveness of a three-dimensional model aimed at scrutinizing the inseparable relationship between the Internet environment where hoaxes are generated, which imposes a certain logic, and the media, which reinforce them by adapting to them. Likewise, the proposed dimensions do not have a specific hierarchy, but instead feed into one another in a non-unidirectional way.

The structural dimension captures how the Internet infrastructure affects the media insofar as this means shifting the circulation of information to social networks and decentralizing the publication of information to all their users. These two characteristics allowed a citizen's video to go viral on various platforms, both those analyzed herein (*Twitter* and *Facebook*) and others not addressed in

> ' The media treatment of the Filomena storm of 2021 confirms that disinformation is not a phenomenon limited only to the electoral or political sphere, as it extends to all strata of social life '

this work (*Instagram*, *TikTok*, and *YouTube*). At the same time, the media unambiguously adapted to this logic. On the one hand, they published information directly on the social networks where they are active. On the other, when they generated and shared content about the hoax on their official pages, they also facilitated its dissemination and reinforced the existence of this type of content prepared by surrogate denialist voices.

The economic dimension focuses on the business model existing on the Internet and the adaptation of the media to it to achieve higher income. The Internet has allowed a quantification of the impact of content due to the existence of metrics that calculate, among other issues, the interactions received on social networks. In this work, the data collected from *Facebook* and *Twitter* shed light on the moments of greatest diffusion and the headlines that attracted the greatest interest from the audience. This latter question explains the writing of more attractive headlines for network users, who refer to the hoax to refute or support it, for example: "A denier assures that the snow of the storm Filomena "is not real" and burns it with a lighter" (*20 minutos*). In the same way, the frequent dissonance between the headline and subsequent content of the piece reflects the sensational tendency when capturing visits through the summary of pieces that appear on social networks: this is in essence clickbait, for example: "Joaquín Prat, perplexed and speechless before the snow deniers: his face says it all" (*El confidencial*). Both behaviors reveal the appropriation of the logic of the Internet by traditional media.

The pragmatic dimension is observed in the concrete routines of the media within the current informational scenario. As can be seen in the case of the Filomena storm, there is an excess of information and multiple authorities on the Internet, which translates into a proliferation of hoaxes on this subject, as reflected in some of the pieces analyzed, and the disappearance, in some cases, of scientific knowledge as an authority that allows meteorological phenomena to be understood in a timely way. The media respond to this environment in two ways:
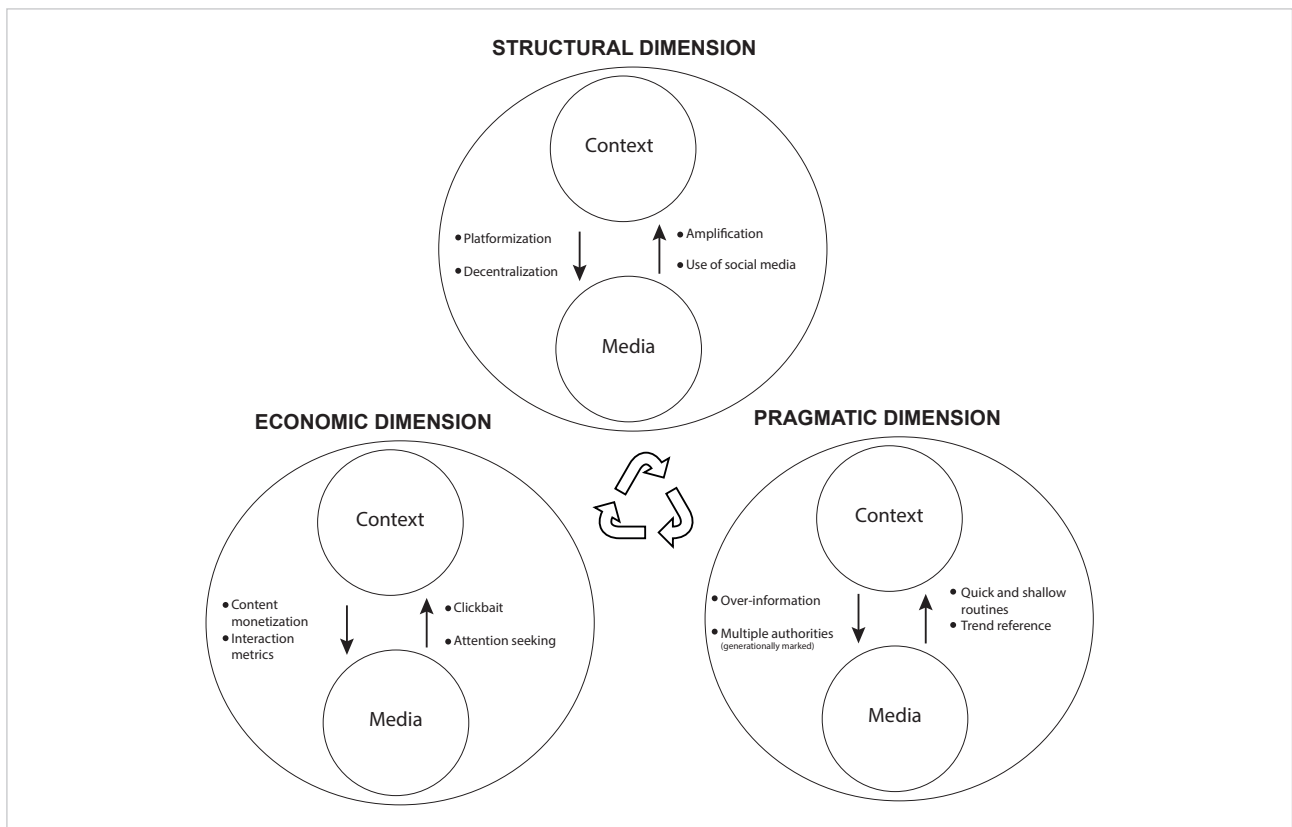
Figure 7. Study model of the media crisis in the context of disinformation.

- by searching for trending facts;
- resorting to the speed and superficiality in its coverage, for example, "The best memes of the storm and the Filomena storm" (*Diario crítico*)

The research presented herein describes the coverage of a hoax (with more than one piece in various media) whose relevance was so anecdotal that interest on the part of the audience disappeared three days after its appearance. The published content was short and often focused on describing reactions on social networks or highlighting posts that disproved the hoax on these platforms.

‛ Regarding the dissemination and coverage of hoaxes in the period of analysis, there is an underlying context that facilitates the existence of disinformation flows and in which the media play an essential role both to favor their expansion and to promote their understanding ’

The three-dimensional model proposed herein is built from empirical data on the coverage of a snow denial video in the traditional media. The intention is to pave the way for future research that aims to study disinformation in combination with the media, either from an approach to the context or from the perspective of the media, from a structural, economic, or pragmatic dimension, or even through a holistic use of all three. The application of this theoretical model to empirical cases will confirm its usefulness and, ultimately, enable its improvement and development to understand more effectively the relationship between the media crisis and the current flows of disinformation on the Web.

7. Note

1. This phenomenon can be easily explained from a scientific point of view: the change from solid to gaseous state is called sublimation, and the black color results from the residue of the fuel from the lighter itself.

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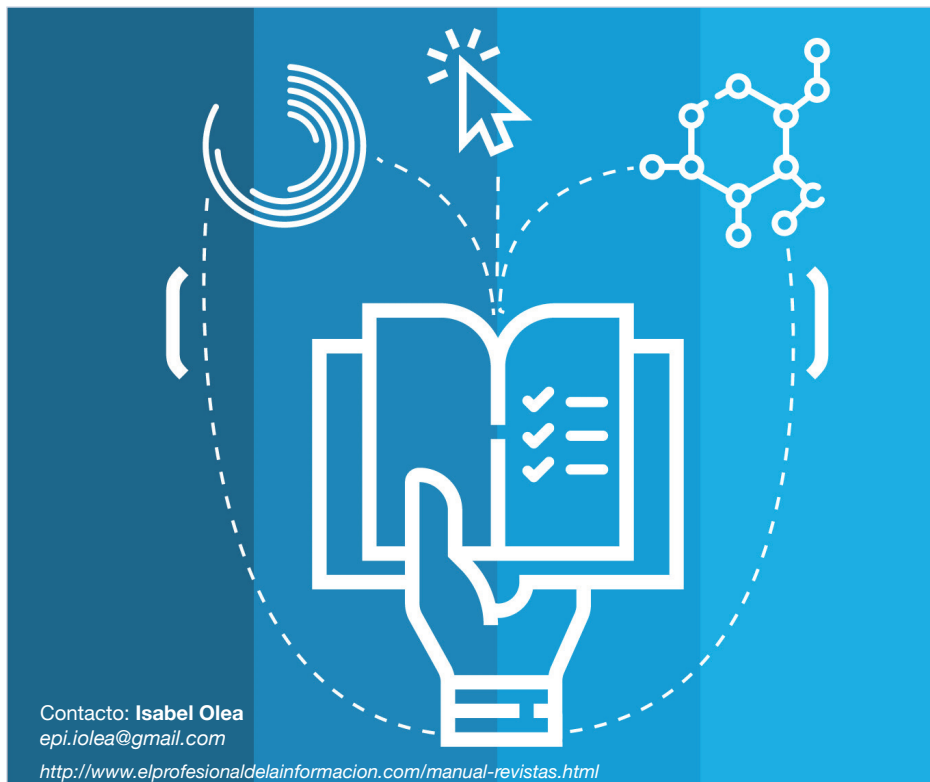*https://doi.org/10.1080/17512786.2018.1493946*

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