

Twitter content curation as an antidote to hybrid warfare during Russia's invasion of Ukraine

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Abstract

Concern regarding information disorders has been magnified by the proliferation of social networks. Since its occupation of Crimea in 2014, Russia has been spewing disinformation both inside and outside its borders, giving rise to a hybrid conflict, which since 24 February 2022 has become an invasion. Faced with this flood of malicious information on social networks, fact-checkers assume the role of content curators, relying on contextualization, verification, and literacy improvement to reduce such noise. This work studies the *Twitter* activity of three Spanish fact-checkers (*Newtral*, *EFE Verifica*, and *Maldito Bulo*), to fight this new epidemic of disinformation. The sample ($n = 397$) was subjected to content analysis to study the evolution of the verifications and their reaction capacity, the purpose of their activity, the formats in which the content is presented, and their distribution and interaction as revealed by reactions on *Twitter*. The results reveal a rapid, albeit repetitive, response of the fact-checkers to the invasion, support from them to end the internationalization of hoaxes, a reliance on denials and contextualization rather than literacy improvement, unattractive formats, and a distribution and impact that demonstrate a greater reaction to sensational and emotive content.

Keywords

Disinformation; Misinformation; Fake news; Hoaxes; Verification; Hybrid warfare; Social media; Media; Journalism; Media literacy; Content curation; Ukraine; Russia; *Twitter*.

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1. Introduction

Russia's invasion of Ukraine has once again upset global geopolitics by fostering a resurgence of the Cold War and a geostrategic contraction toward a new, bipolar world, in which disinformation has become an “asymmetrical and indirect military method” (Milosevich-Juaristi, 2017).

On 19 February, in an interview with the *EFE Agency*, the Spanish Defense Minister Margarita Robles warned of the disinformation component in the tensions resulting from what was then a crisis between Russia and Ukraine:

“There is a situation of a lot of misinformation, of psychological warfare, so without lowering our guard at any time, this firm and determined commitment through the diplomatic channel requires that we all show responsible prudence with continual evaluation of the situation, avoiding the generation of any kind of alarmism” (*EFE*, 2022).

Despite warnings from the USA, no one could have imagined that, just five days later, Russia would invade Ukraine and the first European war of the twenty-first century would begin, a hybrid war that had already begun with the Crimean crisis in 2014 and in which disinformation would be used as a weapon of war and social networks as endless trenches, destabilizing and delegitimizing governments, provoking distrust, polarizing public opinion, and undermining democratic models.

Hybrid warfare is managed chaos. This starts with a virus that subverts the social system of the target state. Then, if its unconventional pseudo-military mobs and vanguards (for example, individuals from the *Pravy Sektor*) fail to seize power by force or intimidate the government into abdicating, a real but unconventional war begins (Korybko, 2018).

Such fourth-generation wars merge traditional physical wars based on heavy artillery with psychological warfare (Baqués, 2015), through control and information censorship, but also by the distribution of false, decontextualized, or misleading information through media or social networks to demoralize the opponent by disrupting their discourse or fabricating one's own to achieve greater power.

Against the background of this dilemma, this study focuses on the potential of fact-checkers to alleviate the danger from disinformation in times of social vulnerability. In this regard, we analyze the role of the main Spanish fact-checking organizations, *Maldito Bulo*, *Newtral*, and *EFE Verifica*, on the social network *Twitter*, as possible curators of information disorders circulating from the days before the invasion and during the siege of Kiev. Meanwhile, we also study the rise and the reaction capacity of these fact-checking agencies, which are even working in a coordinated manner during the conflict through the interactive portal #UkraineFacts, developed by *Maldita* and promoted by the *International Fact-Checking Network (IFCN)*.

“The hybrid war had already begun with the Crimean crisis in 2014 in which disinformation was used as a weapon of war and social networks as endless trenches”

1.1. Misinformation, disinformation, and malinformation as weapons of war

Intentional disinformation and the circulation of false information have become a major problem in the twenty-first century (Castillo-Riquelme *et al.*, 2019), in a context in which post-Internet technologies have

“modified the very nature of collective interpersonal communication” (Del-Fresno-García, 2019).

The very conception of disinformation itself is thus subject to constant evolution, subdividing it into three distinct categories of misinformation, disinformation, and malinformation, depending on to its intentionality, level of truth or falsehood, possibilities of use, and strategic elements (Wardle, 2017). Firstly,

“Inaccurate information (or misinformation) can mislead people whether it results from an honest error, negligence, unconscious bias, or (as in the case of disinformation) intentional deception” (Fallis, 2014, p. 1).

Disinformation corresponds to defective information processing as a result of a lack of objectivity (propaganda), integrity, or information pluralism (censorship) (Floridi, 2011). Finally, malinformation can be defined as real information that is distorted with a clear intention of harming a person, organization, or country, thus

“‘malinformation’ requires both intention and equivalence and often involves a repurposing of the truth value of information for deceptive ends” (Baines; Elliott, 2020, p. 12).

During the waves of the Covid-19 pandemic and the corresponding vaccination period (Morejón-Llamas, 2022), this contamination of the public discourse has intensified in a context in which distrust and polarization are perceived in the media (Masip; Suau; Ruiz-Caballero, 2020), leading to a need for units beyond the media conglomerates to verify content (Aguado-Guadalupe; Bernaola-Serrano, 2020; Catalán-Matamoros, 2020; García-Marín, 2020; Gutiérrez-Coba; Coba-Gutiérrez; Gómez-Díaz, 2020; López-Pujalte; Nuño-Moral, 2020; Noain-Sánchez, 2021).

The activity of such fact-checkers becomes relevant in situations of uncertainty, since it is during such economic, political, social, and health crises that disinformation emerges exponentially (Aparici; García-Marín; Rincón-Manzano, 2019; Alexandre-Benavent; Castelló-Cogollos; Valderrama-Zurián, 2020; Salaverría *et al.*, 2020; Sánchez-Duarte; Magallón-Rosa, 2020; Rodríguez-Pérez, 2021). In fact, its link to the political field has become a broad field of study

during the last decade (Allcott; Gentzkow, 2017; Wintersieck, 2017; Coromina; Padilla, 2018; Young *et al.*, 2018; Rodríguez-Andrés, 2018; Pérez-Curiel; Velasco-Molpeceres, 2020).

Disinformation as a weapon of war is intended to hinder and complicate international relations, undermine the trust of citizens in their leaders and institutions, and discredit opposing political thoughts or approaches. From the end of the Tsarist era and with the Bolshevik Revolution of 1917, disinformation became a central pillar of the propaganda produced by the Soviet Union. In 1919, under the umbrella of the *Comintern*, disinformation was used to reinforce the Soviet image while weakening and distorting the Western one. During the Cold War, in a polarized and confronted world, disinformation acquired greater importance and was used as a weapon of war, with the *KGB* assigning specialized agencies to such actions through *Department D (disinformatsiya)* (Colom-Piella, 2020). This service, launched in 1959, acted not only in the USSR but also, from 1963, in satellite countries such as East Germany, Hungary, Poland, Czechoslovakia, and Bulgaria, with the aim of

“discrediting the USA and the capitalist countries, thereby achieving the establishment of communist systems throughout the world” (Rodríguez-Andrés, 2018, p. 233).

Three disinformation fronts emerge from the Kremlin (Milosevich-Juaristi, 2017): domestic disinformation (aimed at Russian citizens), disinformation for neighboring countries (especially those territories that were former Soviet republics), and disinformation as an “alternative point of view,” aimed at Europe and the USA. Regarding the disinformation disseminated towards neighboring and satellite countries, the author points out that the discursive axes refer to the absence of human rights, the lack of security for citizens, and liberal democracy, messages that can achieve penetration in a context in which the main Western actor, *NATO*, exhibits clear incapacity, given the ongoing crises since 2008: the economic crisis, migration crises, Brexit, and now Covid-19. The aim is to hinder the desire of former Soviet republics to join *NATO*.

The case of Ukraine is paradigmatic because it reflects three types of disinformation messages aimed at Russia’s neighbors: (1) the annexation of Crimea and the war in Donbas are justified by the need to protect Russians threatened by the “fascist” government of Kiev, (2) Ukraine is defined as a “failed state” and a “semi-sovereign” subject, and (3) the West is to blame for provoking a “civil war” in the country (Milosevich-Juaristi, 2017, p. 4).

These chaotic and systemic wars take advantage of the potential of technology and the virality of social networks (Mehta *et al.*, 2021), artificial intelligence, algorithms, troll farms such as the *Internet Research Agency (IRA)*, hackers, and bots (Diresta *et al.*, 2019; Xifra, 2020), favoring a long-lasting state of confusion in public opinion and exacerbating the difficulty in accessing truthful information (López-Rico; González-Esteban; Hernández-Martínez, 2020), since the thin line that separates information from disinformation and propaganda becomes turbulent during such a situation of tension (Betancurt-Betancurt, 2004). The recognized capacity of social networks since the Arab Spring and the 15M terrorist attack in Spain (Morejón-Llamas, 2014) has been observed once again during the Russian invasion of Ukraine by redirecting political and military tactics.

Disinformation, which is characterized by its intentionality, manipulation, deception, and lies (Rodríguez-Andrés, 2018), is thus a weapon of war that has managed to increase nonhegemonic states (Baqués, 2015) by applying methods that combine

“disinformation with propaganda, media manipulation (insertion of false news), and information manufacturing (falsifying sources)” (Colom-Piella, 2020, p. 474).

This includes the use of clandestine media, proxies, front organizations, opinion leaders, as well as economic or social manipulations.

The approach to combat this disinformation has resulted in information silence and censorship at the Kremlin’s behest, but also by the West, which after rejecting a military intervention by *NATO*, opted for economic, cultural, and media sanctions that have punished Russia by isolating it both culturally (through the withdrawal of *Disney* and *Netflix*, for example) and informationally, with the majority of international media having left the country owing to the lack of freedom of expression (with the exception of the *BBC*, which continues its broadcasts). In this context, and since the early days of the conflict, various Russian media such as *Russia Today (RT)* and the *Sputnik* agency, which had already been accused of propagating disinformation, have been closed (Elsawah; Howard, 2020), in addition to bans on social networks such as *Twitter*, *TikTok*, and *Facebook*. This harsh censorship policy is accompanied by the fact-checking activity of various national and international organizations that compete to curate information, while other authors rely on artificial intelligence (AI) to mitigate the impact of fake content.

“Disinformation as a weapon of war is intended to hinder and complicate international relations, undermine the trust of citizens in their leaders and institutions, and discredit opposing political thoughts or approaches”

1.2. Content curation, fact-checking, and collaboration during the invasion

The activity of fact-checkers during periods of political and social destabilization has been a fertile field of study for researchers, who have focused mainly on their ability to position fact-checking as a necessary tool to overcome disinformation, contextualize facts, and provide resources that contribute to media literacy. Fact-checking is a professional practice and a new journalistic genre (Graves, 2018) that advocates content curation (Guallar *et al.*, 2020), monitoring of the public discourse (Palau-Sampio, 2018), and a reduction in the polarization and warping of public opinion (Morejón-Llamas, 2021) to revitalize democracy and rebuild journalistic credibility (López-Pan; Rodríguez-Rodríguez, 2020), while proudly demonstrating the transparency and rigor (Humprecht, 2019; Rodríguez-Pérez, 2020) that legitimize this innovative professional practice (Lotero-Echeverri; Romero-Rodríguez; Pérez-Rodríguez, 2018; Ireton; Posetti, 2018; Mena, 2019).

Content curation (CC), understood as the task of filtering and spreading digital content to provide informative value (Guallar; Leiva-Aguilera, 2013), applies

“a wide range of activities related to (1) searching, (2) monitoring and management, (3) selection, (4) analysis and verification, (5) editing, and (6) spreading of content of social interest from the web” (Codina, 2018, p. 3).

Twitter provides the ideal space for CC to improve the journalistic quality on social networks thanks, in part, to the appearance of new possibilities, such as the use of conversation threads (Guallar; Traver, 2020). CC is thus understood as both a process and a product. Content curation includes the tasks of confirming and verifying information and thus the denial of rumors:

Sharing such actions and showing interest in publishing and/or recommending truthful content to one’s *Twitter* audience can positively promote one’s personal brand. In this sense, it provides an added value of separating the wheat from the chaff in a context marked by an overabundance of available information. (López-Meri; Casero-Ripollés, 2017, p. 68)

Fact-checkers publish two main types of content, resulting from a process of constant verification and curation:

- The mostly highly valued fact-checking content is information verification, i.e., indicating whether it is true or false, or the degree of falsehood. In this case, the curation activity consists of ex post verification of information that is already published as well as its acceptance or rejection.
- The explanation or presentation of facts or issues on the basis of existing evidence obtained by consulting sources. In this case, the curation corresponds to the most commonly used meaning of the term, that is, explaining or commenting on a topic or fact on the basis of a selection of digital content.

Fact-checking aims to improve the quality of information, especially on social networks (Molina-Cañabate; Magallón-Rosa, 2020), where discourses are viralized through the immediacy and emotionality (Ibáñez-Fanés, 2017) that prevail in the current, post-truth era, thus becoming a real challenge for both media and active audiences (Ufarte-Ruiz; Peralta-García; Murcia-Verdú, 2018; Tuñón-Navarro; Sánchez-del-Vas, 2022), especially when such disinformation refers to political issues (Uscinski; Butler, 2013; Allcott; Gentzkow, 2017). Despite the obstacles that may be encountered, fact-checking is growing at a dizzying rate, as indicated by the Duke Reporters’ Lab, which reports 341 fact-checkers across 105 countries (Stencel; Luther, 2021).

Disinformation circulating on social media about the Russian invasion of Ukraine represents a continuation of the strategy applied by the former Soviet republic since the beginning of the twenty-first century

The Russian invasion of Ukraine on 24 February was accompanied by a wave of misinformation that has caused concern in the international community. In particular, fact-checkers quickly predicted a flood of false information, which has indeed materialized through the decontextualization and production of videos, photographs, and various types of social media posts. In such posts, one can see information manufactured using war films, video games, or images and videos from previous conflicts. From this perspective, and with a clear commitment to collaborative fact-checking (Sánchez-González; Sánchez-Gonzales; Martos, 2022) that already exploded during the Covid-19 crisis to fight against the internationalization of hoaxes, *Maldita* considered it necessary to create an international database (#UkraineFacts) to streamline the procedure and minimize transnational distribution.

#UkraineFacts is the result of information supplied by more than 100 fact-checkers around the world, and just three days after its launch, it already included “more than 300 entries from checkers in 35 countries” (*Maldito Bulo*, 2022). The need for this project lies in a new problem detected by *Maldita*, i.e., the immediacy with which disinformation regarding the invasion of Ukraine circulates internationally, as opposed to what happened with Covid-19 hoaxes, which took weeks to spread internationally. For this reason, they recognize that a collaborative effort is needed to measure timescales and accelerate verification activity, to combat the virality of the internet. As pointed out by *Maldito Bulo* (2022),

“Disinformation about Ukraine is viralizing in disparate parts of the world at the same time. Disinformation that circulates on the same day in 17 countries at once.”



Figure 1. Interactive map of the #UkraineFacts collaborative verification project
Source: <https://ukrainefacts.org>

This database is supported by the signatories to the *IFCN Code of Principles* and is presented as an interactive map (Fig. 1) that enables access to verifications by country, thereby providing an understanding on a global scale of the circulation and transnational nature of disinformation about the invasion. The website presents an overlay of the verification units denied by the fact-checkers involved in the project on an interactive map. The amount of disinformation disseminated in each country is indicated by red tones, while countries in which specific information (selected in the timeline) circulates are shown in blue. Likewise, by clicking on the disinformation, one can access the articles that verify the content.

2. Methodology

The working hypothesis starts from the increase in disinformation about the Russian invasion of Ukraine on social networks such as *Twitter*, *Facebook*, *Instagram*, and *TikTok*, as well as *WhatsApp* and *Telegram*. In this context and considering the work of fact-checkers during the Covid-19 crisis, it seems appropriate to consider that, in this context of high vulnerability, they will also exert efforts to curate and verify disinformation. To understand this phenomenon, we thus ask:

- Q1. How have fact-checkers acted, and to what extent have they accelerated their rates of verification following the start of a war that has been experienced live via social media?
- Q2. What was the aim of the posts on their *Twitter* profiles during the Russian invasion of Ukraine?
- Q3. Which strategies are applied by fact-checking organizations to inform users on this social network about content containing disinformation?
- Q4. Does the level of acceptance and distribution enjoyed by these verifications make them efficient in the fight against the virality of disinformation?

The main objective of this study is to carry out a comparative analysis of the activity and impact of the accounts of the fact-checking organizations *Maldito Bulo*, *Newtral*, and *EFE Verifica* on *Twitter* during the early days of the Russian invasion of Ukraine, to understand the ability of these fact-checkers to curate content via their social media accounts. We also set ourselves the following secondary objectives:

- O1. To define the evolution of the verifications and confirm the ability to react to a war with a high disinformation component based on propaganda and hoaxes.
- O2. To analyze the resources and activity of the fact-checkers as content curators and media literacy improvers.
- O3. To outline the pattern of presentation of such information based on the discourse, format, and graphics used.
- O4. To understand the impact of their posts through the retweets, likes, and comments generated in the *Twitter* community.

These objectives are achieved by applying the content analysis methodology (Bardin, 1977; Piñuel-Raigada, 2002; Krippendorff, 2004) based on a comparative case study that enables quantitative, qualitative, and discursive measurement of the information produced by the selected fact-checkers.

The main limitation of this work is the ongoing nature of the conflict, which was still occurring while this study was being prepared. Therefore, our intention is to offer an approach to the study of disinformation in the early days of the invasion of Ukraine, since the study of communication is pertinent during the first days of a crisis.

In this sense, various authors (González-Herrero, 1998; Fita, 1999; Almada, 2009; Micaletto-Belda, Lasso-de-la-Vega; Marín-Dueñas, 2016; Micaletto-Belda; Sanz-Marcos, 2019; Martín-Herrera; Micaletto-Belda, 2021) have pointed out that the start of an event of these characteristics represents one of the most important phases of the communicative management of a crisis. Citizens will be deeply concerned about the situation and will demand that media supply up-to-date information about the events, which they will try to obtain in any way.

“The approach to combat this disinformation has resulted in information silence and censorship at the Kremlin’s behest, but also by the West”

2.1. Sample selection

The selected sample ($n = 397$) corresponds to an analysis of the *Twitter* profiles of the three fact-checkers chosen for this work: @malditobulo, @Newtral, and @EFEVerifica. All their tweets referring to Ukraine and Russia were extracted, as well as those by international organizations such as the European Union (EU), North Atlantic Treaty Organization (NATO), United Nations (UN), and Government of Spain. The sample ranges from 21 February 2022, the first day on which a tweet about the conflict was detected, until 28 February, the day on which the first round of negotiations between Russia and Ukraine began, after which the Ukrainian President Volodymyr Zelensky requested his country’s urgent accession to the EU.

The criteria for selecting the topic are based on the interest aroused by the disinformation war in Ukraine and the reactions of journalistic institutions, organizations, and professionals to mitigate the aims of hoaxes about the invasion. The *Twitter* social network was chosen because this platform is characterized by wide debate on political issues while also exhibiting virality and replication of disinformation through false profiles, impersonated identities, and bots, among other accounts, in addition to having been widely studied from the perspective of disinformation and fact-checking (Maggallón-Rosa, 2018; Pérez-Dasilva; Meso-Ayerdi; Mendiguren-Galdospin, 2020).

The selection of the *Maldito Bulo*, *Newtral*, and *EFE Verifica* fact-checkers (Table 1) is based on their continuous activity since the beginning of the conflict as verification systems, as well as contextualizers and media literacy improvers, plus their remarkable work during the Covid-19 crisis, which makes them references in the field of checking false content. They are considered to be representative cases to study, in addition to having the seal of the *IFCN*, a body that monitors compliance with journalistic rigor in terms of the verification process.

Table 1. Profile of the fact-checkers on *Twitter*

	Launch	Tweets	Following	Followers
@malditobulo	November 2016	35.7K	12	294.4K
@EFEVerifica	March 2020	4.3K	32	10.5K
@Newtral	September 2017	56.3K	123	198.4K

Maldito Bulo was born from *Maldita*, which was launched in 2016 to offer “tools so they don’t fool you” (*Maldita*, 2020). This nonprofit association is specialized in the field of disinformation and has given rise to several spin-offs such as *Maldita Hemeroteca*, *Maldito Bulo*, *Maldita Ciencia*, *Maldito Dato*, *Maldito Sport*, and *Maldito Feminismo*. Its main objectives are to:

- Monitor and control political discourse and promote transparency in public and private institutions
- Verify and combat disinformation
- Promote media literacy and technological tools to create a conscious community that can protect itself from disinformation and is active in all areas

Maldita is funded through private contributions from the community itself, collaborations from the media, philanthropy, and scholarships, awards, technological alliances with *Facebook*, *WhatsApp*, *Twitter*, and *Jigsaw* (Google incubator based on artificial intelligence), public tenders and grants, educational and training projects, and specific services for the *Junta de Andalucía*, *Banco Santander*, and as a documentary producer (*Maldita*, 2020).

The methodology applied by the fact-checking unit follows a natural process that is also carried out by other national and international fact-checkers such as *Chequeado* (Argentina), *Agencia Lupa* (Brazil), *Bolivia Verifica* (Bolivia), *Verificador* (Peru), and *ColombiaCheck* (Colombia), among others. The first step of this process, updated in May 2020, consists of selecting (according to its virality and danger) content with the potential for being false. Secondly, research and interaction with primary sources to facilitate data extraction opens the way to a debate and

“The belief that democracies would not be able to restrict the flow of information in countries where freedom of expression reigns has been found to be wrong”

finally a vote to evaluate the disinformation and classify it as “hoax” or “no evidence.” Facts, data, images, audios, and videos that are false or have not occurred or that have been manipulated, decontextualized, and parodied, and even tweets elaborated by an author whose identity has been deliberately supplanted, to falsify reality and misinform public opinion, are considered to be “hoaxes.”

Newtral is a media startup by the journalist Ana Pastor. Since its foundation in 2018, it has focused on four areas: production of programs (television and platforms), new narratives on networks, fact-checking, and artificial intelligence. Previously, in 2013, Ana Pastor’s program, *El Objetivo* on *La Sexta*, already addressed content verification. In fact, they were the first Spanish signatories to the *IFCN*, in 2017 (*Newtral*, 2021). Since 2020, they have participated in *Meta’s Third Party Fact-checking Project (Facebook)* and with *TikTok* as advisors to reduce disinformation. This (*Newtral*, 2021) and prioritizes new digital narratives. Its methodology can also be divided into several phases:

- the detection of public statements or speeches of interest or relevance;
- verification through various sources, including those involved, officials, experts, other media, documentary support, etc.;
- sharing and the final decision;
- the content is qualified as truth, half-truth, misleading, or false.

EFE Verifica, which belongs to the international agency *EFE*, was launched in 2019. Its main functions are the verification of viral content and messages in different formats and the contextualization of facts that generate confusion in public opinion. They are guided by the ethical principles of the *EFE* agency, to which they apply a methodology (Fig. 4) governed by the same procedure as the aforementioned fact-checkers (selection, verification, and evaluation/review), although it lacks the last step of qualification or labeling, since

“many of the matters on which we write are not white or black, and much of our work has grey areas” (*EFE Verifica*, 2022).

The agency has belonged to the *IFCN* since 2019 and since 2020 has participated, like its counterparts, in the *Meta* program. State-funded, the team’s budget is financed from the general budget of *EFE* itself.

2.2. Analysis procedure

To study the content published on the respective *Twitter* profiles of *Maldito Bulo*, *Newtral*, and *EFE Verifica*, we prepared an analysis sheet of the *Twitter* activity of these fact-checkers, inspired by the proposal of **Magallón-Rosa** (2018), and whose purpose is to measure the evolution of the publications, study their purpose, define the resources used for their dissemination, and evaluate the dissemination and interaction with the community, as presented in Table 2.

The registry variables enable the quantitative analysis and measure the temporal evolution of the verifications in a comparative way. Likewise, the purpose of the tweets is studied to determine their main function, considering their main purpose of verification, but without ignoring the expansion and contextualization of information to understand reality, literacy improvement resources they contribute to the development of a critical perspective among citizens, as well as self-promotion, since these organizations must take advantage of such times of greater activity to publicize themselves, since most of them rely on economic contributions from the public. The formats used (image, graphic, composition, video, text, and audio) are also analyzed, with the aim of understanding the predominant style used to present the verifications, as well as other resources used such as hyperlinks, mentions (@), hashtags, and emoticons. We also apply semantic analysis using the open-source tool *Voyant Tools*, which enables a textual analysis of the content and reveals the most used terms, as well as the identification of terminological trends. Finally, we observe the dissemination and interaction from the *Twitter* community through the number of likes, retweets, and comments.

The sample was analyzed and coded manually by the three authors of the study as coders using intentional, nonprobabilistic collective sampling (**Otzen; Manterola**, 2017). They shared their conclusions according to the values given,

Just as happened at the juncture studied herein, new Propaganda 2.0 models will emerge and require cutting-edge and innovative treatments as well as antidotes from content curation

Table 2. Analysis sheet for *Twitter* activity

Registry variables	Fact-checker Date Tweet
Purpose	Denial Expand/contextualize information Literacy improvement resources Self-promotion
Format	Image Graphic Composition Video Text Audio
Resources	Hashtags Emoticons Mentions
Semantics	Keywords Most used terms
Dissemination and interaction	Likes Retweets Comments

on the basis of a previous group interview in which they proposed the criteria and selection profiles for each variable. Simultaneously, the data were collated and studied using Excel, which we also used to produce some of the graphics illustrating this work.

3. Results

3.1. The role of Spanish fact-checkers at the beginning of the invasion

A total of 397 tweets framed in the Russian invasion of Ukraine were published by *Newtral*, *Maldito Bulo*, and *EFE Verifica* from 21 to 28 February (Fig. 2). A balance between the fact-checkers was not observed, with a predominance of *Newtral* (53.11%, 211 publications), with respect to *Maldito Bulo* (33%, 131) and *EFE Verifica* (13.9%, 55).

The daily evolution followed the course of the conflict, with publications to verify or contextualize information being practically inexistent in the preceding days. February 21 was the first day on which two tweets (0.50%) about the risk of invasion emerged. The following day, the number of posts increased to 18 (4.53%), while on 23 February (the day before the invasion), only 12 tweets (3.02%) were published. By contrast, on 24 February, the day on which war was declared, publications reached their peak, reaching 117 (29.48% of the total analyzed). The next day, the information disseminated by fact-checkers on their *Twitter* profiles almost halved, reaching 68 tweets (17.13%). On 26 February, the numbers fell again, to 53 (13.35%). On 27 February, they fell again to 43 (10.83%), while on 28 February, they doubled to 84 tweets published (21.15% of the total sample). The day on which the two delegations from Kiev and Moscow first met for discussions was 28 February.

Comparing the fact-checkers, note that *Maldito Bulo* did not start publishing until the 24th, the day of the invasion, although that day it already reached 11.09%. *Newtral*, on the other hand, led the publications from the start, reaching 4.03% on the second day. It reached its highest figure of 16.12% on 24 February. *EFE Verifica* remained fairly constant, with an average of fewer than 10 publications per day. It also started on the 21st, albeit slowly.

3.2. Content curation: Contextualization and denials

The strategy to counteract the explosion of disinformation observed during the invasion (Fig. 3) has been based on the expansion and contextualization of information (45.09%) as well as denials (47.35%). The function of improving literacy has been overshadowed, reaching only 4.28%, as has self-promotion with 3.27%.

Untangling the work of each of the fact-checkers confirms that *Newtral* is the fact-checker offering the most information (44.08%), trying to achieve its curation aims through verified, well-processed content, with rich sources and data. *EFE Verifica* expands the information in only 0.75% and *Maldito Bulo* in 0.25%. The content on which these publications is based aims to explain the roots of the conflict or present its leaders, the role played by institutions such as *NATO* and the *EC*, and the sanctions and economic, sporting, and cultural repercussions in Europe. They also provide up-to-date information on the number of attacks, the flight of refugees, the provision of humanitarian aid, negotiation processes, as well as information on nuclear weapons, cyberattacks, and technology.

@malditobulo leads in terms of the purpose of denying false information (30.23%), which in fact is the main function of this fact-checker. It is followed by @EFEVerifica (10.58%) and @Newtral (6.55%). The disinformation that is denied and classified as false corresponds to misleading videos

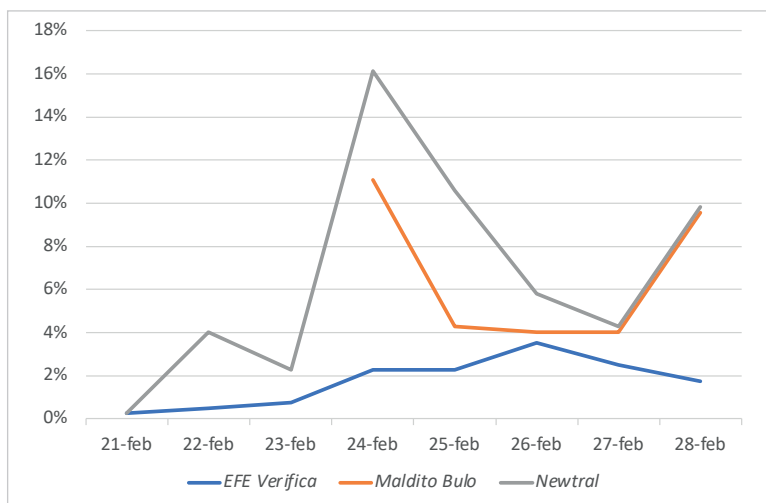


Figure 2. Evolution of the verifications by @malditobulo, @Newtral, and @EFEVerifica (21-28 February).

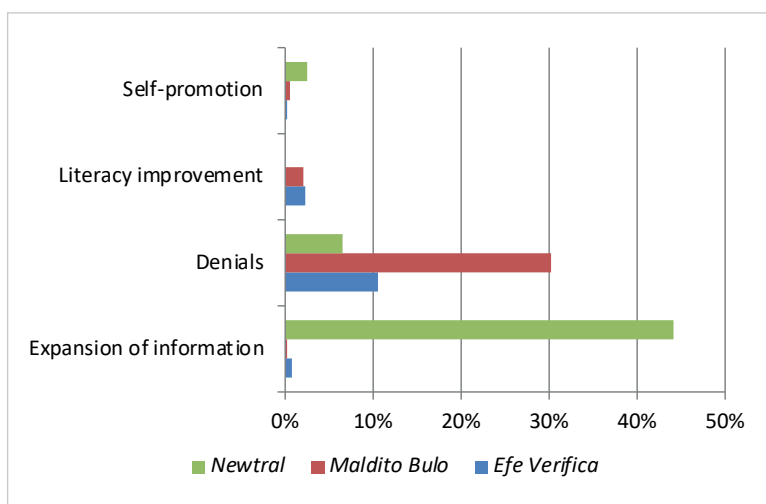


Figure 3. Purpose of the verifications issued by the fact-checkers

circulating on the internet, false statements by public figures, sensationalist images, as well as continuous hypotheses about President Zelensky’s participation in the conflict, his alleged flight from the country, etc.

Self-promotion, which is anecdotal, is led by *Newtral* (2.52%), alluding to the term “Ukraine,” followed by *Maldito Bulo* (0.50%) and *EFE Verifica* (0.25%). Meanwhile, literacy improvement, with very few publications, is employed by *EFE Verifica* (2.27%) and *Maldito Bulo* (2.01%), which repeats in various tweets the statement “Resources to stay informed during the bombing of Russia to Ukraine and not fall for any hoaxes” [“Recursos para mantenerse informado durante el bombardeo de Rusia a Ucrania y no caer en ningún bulo”]. *Newtral* does not adopt this function.

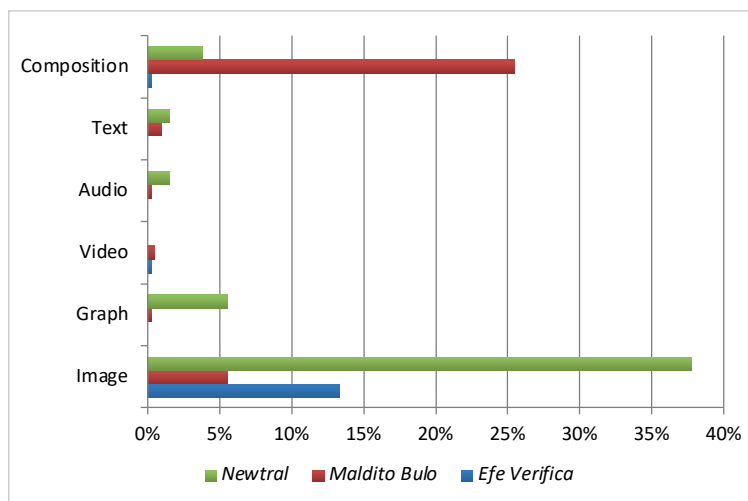


Figure 4. Presentation format of the tweets

Correlation of the purpose with the temporal evolution reveals that, on the 24th, the expansion and contextualization of information stood out, alongside scarce self-promotion and literacy improvement, while on 28 February, denials prevailed.

3.3. Presentation formats used by the fact-checking units

The analyzed content is presented mostly accompanied by images (Fig. 4) that complement the text (56.67%). These images are archival photographs of the presidents involved in the conflict, Putin and Zelensky, as well as senior European leaders. They also use images of flags, military weaponry, fighter jets, and, in a few publications, real photographs of the invasion. This section includes screenshots of *TikTok* videos to which a cross has been added. Photographs predominate in contextualizations and expansion of information (36.78%). Images are used in 15.37% of denials and 3.78% of those focusing on literacy improvement. *Newtral* is the fact-checker that uses them most (37.78%), compared with *EFE Verifica* (13.35%) or *Maldito Bulo* (5.54%).

The composition format (Fig. 5) refers to the creation by fact-checkers of a defined style, characterized by the presentation of the verification with the word “Bulo” [“Hoax”] (*Maldito Bulo*) or “Fake” (*Newtral*) superimposed on a central image that captures the news or false statement, against a background that shows the falsehood that is reported. Regarding the style, it is worth mentioning that *Maldito Bulo* applies the color red in all its verifications, while *Newtral* uses black, both being clearly distinguishable. Compositions are chosen for 29.47% of the studied tweets, in particular in 25.44% by *Maldito Bulo*, well above the figures of 3.78% for *Newtral* and 0.25% for *EFE Verifica*. All of these are denials, with no compositions aiming at expanding information, improving literacy, or self-promotion.

Graphics are used in 5.79%, always aiming to expand or contextualize information, with *Newtral* in the lead in this regard (5.54%). Textual format (2.51%), without any accompanying image or graphic, is used to expand information by *Newtral* (1.51%) and *Maldito Bulo* (1%). The use of audio (1.76%) to deny a compendium of disinformation is led by



Figure 5. Fact-checking units on the Russian invasion of Ukraine. Source: @malditobulo and @Newtral.

Newtral (1.51%), well above *Maldito Buló* (0.25%). Videos (3.77%) stand out in the publications by *Newtral* (3.02%), being used for self-promotion or to expand information.

Content curation has become a primary need because contamination of the media space by Kremlin-affiliated media

Hashtags that allude directly to the invasion are used by the fact-checkers in 38.03% of cases, to position and define the content. The tags used by the three fact-checkers analyzed are: #GuerraEnUcrania, #ObjetivoGuerra, #UkraineFacts, #Rusia, #Ucrania, #Putin, #NewtralData, #SinVerificarNoRT, #MalditaLaHora, and #OSINT.

- #ObjetivoGuerra is used by *Newtral* to refer to denials and expansion of information regarding out-of-context image compilations, montages, and false information, as well as reactions from the international community to the Russian offensive and to present the invasion in map format.
- *Maldito Buló* uses #UkraineFacts, as it leads this collaborative fact-checking initiative. They use this hashtag to deny information, as well as to offer resources to improve media literacy. In fact, on 26 February, *Maldito Buló* tweeted: "Important: the fact-checkers at @factchecknet have launched #UkraineFacts, a global, collaborative database to fight disinformation with more than 300 fact-checker entries from 35 countries" ["Importante: Los verificadores del @factchecknet lanzamos #UkraineFacts: Una base de datos mundial y colaborativa para luchar contra la desinformación. Más de 300 entradas de verificadores en 35 países"]. This post was widely disseminated, attracting 108 likes and 60 retweets. However, it did not generate a conversation, as it was found in only two comments.
- #OSINT is used on several occasions by *EFE Verifica* and relates to the use of open-source intelligence to confirm data from the beginning of the conflict. While Russian media and propaganda channels announced that the presence of soldiers at the border was due to maneuvers, fact-checkers warned that these data were false and that this was actually a growing military mobilization.
- #GuerraEnUcrania is employed by *EFE Verifica* to label denials and resources for literacy improvement. We find, for example, two tweets from 24 February that address disinformation as a weapon in the conflict: "The other #GuerraEnUcrania is that of disinformation. Do you know what weapons are used?" ["La otra #GuerraEnUcrania es la de la desinformación. ¿Sabes cuáles son sus armas?"] or "Disinformation is another weapon of the #GuerraEnUcrania. Mainly manipulated or old videos or photos have been used to spread falsehoods since the beginning of the crisis in Ukraine and Russia." ["La desinformación es un arma más de la #GuerraEnUcrania. Vídeos y fotos son los principales contenidos manipulados o antiguos que son utilizados para propagar falsedades desde el inicio de la crisis de Ucrania y Rusia"].
- The hashtag #Putin was only used by *EFE Verifica* on 25 and 26 March, to label his speech announcing the start of the #GuerraEnUcrania.
- #NewtralData, #cover, #streaming, and #MalditaLaHora are the tags that *Newtral* and *Maldito Buló* reserve for self-promotion of the respective fact-checking organization. In the case of *Newtral*, the tweets addressing the expansion of information on *Twitch* by Emilio Doménech (@Nanisimo) stand out.
- #SinVerificarNoRT is another of the tags available to *Newtral* to label audio summaries on hoaxes and viral fakes.
- The tags #Russia and #Ukraine, used by *Newtral*, relate to the countries involved in the invasion.

Tweets make use of emoticons to present their information in a more agile way on the *Twitter* social network. They predominate in information aimed at denials, as well as those discussing hoaxes and fakes, while *EFE Verifica* uses a great variety of them more consistently. Below, we represent the most prominent of these (Fig. 6), focused on five fundamental aspects: disinformation channels (1), the situation and consequences of the punishment policies that are applied (2), warnings and alerts relating to disinformation (3), countries involved in the conflict (4), and expanding information (5).

Mentions are used little by the fact-checkers in their *Twitter* accounts. The fact-checker that uses them most is *Newtral*, since it applied them for self-promotion of its content, expansion of information by its journalists, and other platforms belonging to the parent companies of these fact-checking organizations. There is also some indication of other international media that are used as sources of information or to obtain images to contextualize a tweet. One example is the mention of @nytimes by *Newtral*, but we also found others such as @Nanisimo, @DebatAlRojoVivo, @TwitchES, @MomentsES, and @transparentia.



Figure 6. Emoticons used by @EFEVerifica, @Newtral, and @malditobulo

Hyperlinks are used in nearly all the tweets, since they link to the verification processes of the respective companies: *Maldita*, *EFE*, and *Newtral*. At one point, *Maldito Bulo* asks active members of their audience to use *WhatsApp* to request verifications:

“Share verified information, and if you receive something suspicious, send it via *WhatsApp* and we’ll review it”.

On the basis of semantic analysis of the verified content between 21 and 28 February (Fig. 7), we highlight the most popular terms used by the fact-checkers in their *Twitter* profiles. First, note that the information collated in the open-source tool *Voyant Tools* yields a total of 10,239 words. The vocabulary density is 0.143, while the average number of words per sentence is 27.0. The most prominent terms in the corpus are: *Ucrania* (315), *no* (262), *Rusia* (227), *ukrainefacts* (70), *vídeo* (68), *ataque* (61), *explicamos* (57), *actual* (53), *conflicto* (53), *guerraenucrania* (47), *militar* (41), *guerra* (40), *Zelensky* (27), and *Putin* (27).



Figure 7. Semantic analysis of verified tweets

There is, therefore, a prevalence of Ukraine over Russia, since it is the country under attack. *Maldito Bulo* uses the negative “no” to dismantle hoaxes (Magallón-Rosa, 2018) and positions itself with the hashtag #UkraineFacts (70) in first place, above #GuerraEnUcrania by *EFE Verifica*.

3.4. Distribution and interaction on their *Twitter* profiles

The 397 tweets published by *Maldito Bulo*, *Newtral*, and *EFE Verifica* yielded a total of 16,288 likes, 10,258 retweets, and 860 comments. *Newtral* accounts for 43.8%, corresponding to the fact that its publications account for 53.1% of the total. Meanwhile, *Maldito Bulo* accounts for 37% and *EFE Verifica* for 19.2%. *EFE Verifica*, despite broadcasting only 55 tweets, received 3,127 likes, while *Maldito Bulo* received 6,025 likes (Table 3).

Table 3. Reactions to the activity of the fact-checkers

	Tweets		Likes		Retweets		Comments	
@malditobulo	131	33.0%	6,025	37.0%	4,658	45.4%	268	31.2%
@EFEVerifica	55	13.9%	3,127	19.2%	2,318	22.6%	93	10.8%
@Newtral	211	53.1%	7,136	43.8%	3,282	32.0%	499	58.0%

The posts that received most likes are those from *Newtral* on 24 February. The first, attracting 1,591 likes, aimed to provide more information on the closure of Ukraine’s airspace, as well as airports in the south of Russia. The fact-checker provided users with an explanation via #NewtralData. The second, which attracted 684 likes, announced the beginning of the Russian military offensive against Ukraine at the gates of Kiev and in the Donbas. *EFE Verifica* is the second fact-checker with a publication attracting more than 600 likes, in particular, 614. These likes correspond to a tweet from 27 February under the hashtag #GuerraEnUcrania that addressed the denial of a video of a father saying goodbye to his daughter, recorded during the evacuation of the civilian population to Russia, in the self-proclaimed separatist republic of Donetsk.

An update by *Newtral* on 24 February, describing the implantation of martial law in Ukraine, stands out in fourth place with 453 likes. One should also note a tweet from *Maldito Bulo* on 28 February that dismantled the fake cover of *Time* magazine with Putin converted into Hitler under the hashtag #UkraineFacts, following the launch of the collaborative fact-checking unit driven by *Maldita*. Finally, it is worth highlighting other very successful tweets by *Maldito Bulo*, such as those denying a false missile launch, which actually corresponded to the conflict between Palestine and Israel in 2021, and another about a video of Ukrainian soldiers killed in combat, which again dates from the conflict of 2014.

Maldito Bulo stands out in terms of the number of retweets achieved, reaching 45.4% compared with 32% for *Newtral* and 22.6% for *EFE Verifica*, despite only publishing 33% of the total tweets. In line with this, it is noted that the replication of tweets by *Newtral* is minimal. In this regard, the most widely shared publications are those of a father saying goodbye to his daughter (*EFE Verifica*, 477 retweets), the montage of Putin on *Time* magazine (*Maldito Bulo*, 368 retweets), the closure of the airspace (*Newtral*, 335), and that of the missiles (*Maldito Bulo*, 282). These findings highlight the direct relationship between likes and retweets.

The results for the comments follow the trend observed for the percentage of tweets, with *Newtral* accounting for 58% of the comments, followed by *Maldito Bulo* with 31.2% and *EFE Verifica* with 10.8%. However, *Newtral* does reverse here its downward trend in terms of interactions. The post that generated the most comments is the one about Putin’s montage as Hitler, which reached 93 interactions for *Maldito Bulo*. *Newtral* also denied this information, on the same

day, 28 February, but only received 24 comments. The tweet that elicited the second most comments (47) was a compilation by *Newtral* on 28 February that denied images out of context, compilations, false information, and manipulated speeches and in which a conversation thread was opened by the fact-checker. This is the only

“The Covid-19 pandemic promoted collaborative fact-checking on an international scale and the war between Russia and Ukraine has perfected it”

publication to announce the opening of a conversation thread and that generated interactions. In third place, a tweet by *Newtral* on the beginning of the military offensive on 24 February generated 28 comments.

4. Discussion and conclusions

Disinformation circulating on social media about the Russian invasion of Ukraine represents a continuation of the strategy applied by the former Soviet republic since the beginning of the twenty-first century. The strategic application of technology has created a hybrid war that is being fought, fundamentally, in the cyber field, given the potential and impact of disinformation on social networks but also because, in a political conflict or war, the line that separates disinformation from propaganda becomes diffuse (Floridi, 2011).

Content curation has become a primary need because contamination of the media space by Kremlin-affiliated media (Elsawah; Howard, 2020) has alerted the West, international organizations, governments, and information professionals, who risk their credibility as guarantors of freedom of expression by opting for harsh censorship that silences Russia on traditional media and social networks. At this juncture, content curation on *Twitter* becomes an opportunity to “separate the chaff from the wheat” (López-Meri; Casero-Ripollés, 2017, p. 68), leading fact-checkers to maximize their efforts to verify, deny, and nurture the discourse through expanding, explaining, and contextualizing information through a selection of digital content. The fact-checker that posted most on *Twitter* was *Newtral*, followed by *Maldito Bulo* and *EFE Verifica* in descending order. Expansion and contextualization of information are predominant in their tweets, as well as denials, both being more present than literacy improvement or self-promotion.

Although all three increased their activity with the invasion, this reaction was late. Indeed, in the previous days in which confusion and disinformation reigned, there was no reference to the conflict, with neither denials nor contextualizations. Perhaps the latter could have contributed positively to the community. The pace and speed of reaction will be enhanced through projects such as #UkraineFacts. In this sense, it is evident that the Covid-19 pandemic promoted collaborative fact-checking on an international scale and that the war between Russia and Ukraine has perfected it. The exponential growth of publications on 24 and 28 February is due to the greater turmoil in international relations, which stimulated a greater production, dissemination, and viralization of disinformation, thereby increasing the actions of the fact-checkers to curate it. However, the repetition of content should also be recognized, especially regarding denials of viral hoaxes circulating in several countries simultaneously, although the expansion and contextualization of information are also repeated.

In its ability to present denials, fact-checking complies with the logical process of CC (Codina, 2018) in searching for, monitoring, and selecting content that must be verified, then analyzing and verifying it. *Maldito Bulo* dedicates most of its tweets to this task. As pointed out by *Maldita Educa* (2022), disinformation that requires denials includes old photos and videos that circulate as current; audiovisual content from other conflicts that is disseminated as if it were from Ukraine; false subtitles that do not correspond to the audio; video games and simulations that pretend to be real images; fragments of series or films broadcast as if they were not fiction; images that have already been used before to disinform in other contexts; false magazine covers; facts that are current but are claimed to be old to disinform; and tweets that supplant other media. The verification can be carried out using a dual process:

- The consultation of information sources: official ones (government websites, institutional profiles on social networks in both countries, the *Russian Ministry of Defense*, the *Human Rights Watch* organization), experts (historians such as Mikhail Zhirkhov or intelligence experts such as Carlos Fernández-Morán), documentary sources (such as the *Shutterstock* and *Depositphotos* image banks), media (Russian agencies such as *RIA Novosti* and *TASS*, the Ukrainian agency *RBC*, *Defense Express*, *Euronews*, the *BBC*, the *Daily Express*, *The New York Times*, etc.), and the sources involved (such as Patrick Mulder, the creator of the fake cover of *Time* magazine).
- The use of digital tools, including *Google Maps*, *Google Earth*, *Yandex*, *TinEye*, *Liveuamap* search engines, video verifiers such as *InVidVerify* (essential given the spread in *TikTok*), and metadata analysis tools such as *Metadata2go.com*.

Contextualization, led by *Newtral*, is essential to understand the strategic scope and potential of disinformation to

“identify campaigns, predict their objectives, and limit their impact” (Colom-Piella, 2020, p. 479).

It is thus necessary to anticipate events and create a critical perspective in the audience to provide a solid foundation, which allows us to discern what is true and what is not, given the amalgam of disconcerting content that the citizen must face in an armed conflict or social crisis (Baqués, 2015). The creation of such a knowledge base also requires literacy improvement and resource provision, although this does not occur. It is striking that more resources are not promoted, since these fact-checking agencies promote projects that stimulate critical learning on their websites. We thus consider that they do not take advantage of this space or their community to publicize their capacity to improve media literacy.

The *Twitter* posts lack attractiveness and innovation in design, which reveals a lack of adaptation to the public and to the inherently audiovisual nature of the platform, which is inhabited by digital natives who demand greater interaction (**Micaletto-Belda; Martín-Ramallal; Merino-Cajaraville**, 2022). The images that accompany the

texts are repetitive archival photographs that do not provide added information, and when compositions are made, they are limited to embedding the word “fake” or “*bulo*” [“hoax”], accompanied by a red cross overlaid on the image in question. What these tweets do incorporate are hashtags, mentions, hyperlinks, and emoticons to complement the text.

“The hoaxes share an appeal to emotion, sensationalism, and drama, as if, in addition to an asymmetric war, we were witnessing a Hollywood film”

Despite their limited impact in terms of likes, retweets, and comments, the results highlight that the publications that generate the greatest diffusion and interaction are those that alert of political-social changes in Ukraine, as well as videos and emotional images that portray farewells or situations of vulnerability. *Newtral* is establishing itself as the fact-checker that elicits the most discussion, while *Maldito Bulo* receives the most retweets and likes. The tweet with the third highest number of likes was from *EFE Verifica*, despite having less than a tenth of the number of followers as its counterparts. All of these hoaxes share an appeal to emotion, sensationalism, and drama, as if, in addition to an asymmetric war, we were witnessing a Hollywood film loaded with emotional features that appeal to us, arouse pity, and confuse, a feeling that fits in well with the current, post-truth era (**Ibáñez-Fanés**, 2017).

The disinformation war has just begun, and the West is responding reactively to the Russia-NATO crisis. The belief that democracies would not be able to restrict the flow of information in countries where freedom of expression reigns (**Milosevich-Juaristi**, 2017) has been found to be wrong. It is necessary to return to a path of proactivity, to promote and emphasize resources that curate disinformation (**Guallar et al.**, 2020) in a hybrid war, through contextualization, verification, and literacy improvement rather than censorship. The regulation of the Internet, the application of artificial intelligence (**Flores-Vivar**, 2019), and fact-checking (**Molina-Cañabate; Magallón-Rosa**, 2020) are some of the approaches that can be adopted to mitigate the impact of false and decontextualized content on social networks. There is concern regarding the viralization of fake videos manufactured on *TikTok* because of their spread and the interaction elicited among a young audience that lives reality immersively (**Martín-Ramallal; Micaletto-Belda**, 2021), which adds credibility to the spreading hoax.

The limitations of this study include the extremely current nature of the topic, its immediacy, and the changes that are typical of any crisis. The research field that opens up in this regard is infinite at a geopolitical and informative level. The reaction of international organizations in terms of media literacy improvement and fact-checking at the international level could also be studied to promote improvement in content curation processes in contexts with extreme information dependence.

We can only wait for the disinformation panorama that will emerge in the face of two possible scenarios: the full invasion of Ukraine and consequent reprisals against its leaders and population, or the (improbable) total or partial withdrawal of Russia from the occupied territory, a situation that would involve a reconstruction of the concept of victory. It is more than probable that, just as happened at the juncture studied herein, new Propaganda 2.0 models will emerge and require cutting-edge and innovative treatments as well as antidotes from content curation.

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