




Article

# Memetics of Deception: Spreading Local Meme Hoaxes during COVID-19 1st Year

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**Abstract:** The central thesis of this paper is that memetic practices can be crucial to understanding deception at present when hoaxes have increased globally due to COVID-19. Therefore, we employ existing memetic theory to describe the qualities and characteristics of meme hoaxes in terms of the way they are replicated by altering some aspects of the original, and then shared on social media platforms in order to connect global and local issues. Criteria for selecting the sample were hoaxes retrieved from and related to the local territory in the province of Alicante (Spain) during the first year of the pandemic ( $n = 35$ ). Once typology, hoax topics and their memetic qualities were identified, we analysed their characteristics according to form in terms of Shifman (2014) and, secondly, their content and stance concordances both within and outside our sample (Spain and abroad). The results show, firstly, that hoaxes are mainly disinformation and they are related to the pandemic. Secondly, despite the notion that local hoaxes are linked to local circumstances that are difficult to extrapolate, our conclusions demonstrate their extraordinary memetic and “glocal” capacity: they rapidly adapt other hoaxes from other places to local areas, very often supplanting reliable sources, and thereby demonstrating consistency and opportunism.

**Keywords:** fake news; memetics; COVID-19; hoaxes; glocal; misinformation



**Citation:** Rodríguez-Ferrándiz, R.; Sánchez-Olmos, C.; Hidalgo-Marí, T.; Saquete-Boro, E. Memetics of Deception: Spreading Local Meme Hoaxes during COVID-19 1st Year. *Future Internet* **2021**, *13*, 152. <https://doi.org/10.3390/fi13060152>

Academic Editor: Jari Jussila

Received: 14 May 2021

Accepted: 3 June 2021

Published: 10 June 2021

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## 1. Introduction

### 1.1. Fake News: Literature Review and a Minimal Classification

Fake news was defined by the *Collins Dictionary*, which chose it as word of the year in 2017, as: “false, often sensational, information disseminated under the guise of news reporting”. Moreover, the *Cambridge Dictionary* describes it as “false stories that appear to be news, spread on the Internet or using other media, usually created to influence political views or as a joke”. The annual report published by *Reuters* about information on the Internet, in the 2017 edition, states that the expression may refer to: “(1) news that is ‘invented’ to make money or discredit others; (2) news that has a basis in fact but is ‘spun’ to suit a particular agenda; and (3) news that people don’t feel comfortable about or don’t agree with” [1–4].

In the academic literature we can find definitions which are more specific and generally stress that the term is by all means nothing new and indeed goes back a long time, although it has undergone fresh impetus. Allcott and Genzkow defined it as: “news articles that are intentionally and verifiably false, and which could mislead readers” [5], and are concerned with defining their space, thereby preventing them from being considered as unintentional journalistic mistakes, rumours that arise from the news, conspiracy theories, journalistic satire, false statements made by politicians and reports that are biased and guileful but not false [6]. For Brian McNair, who endorses this restricted notion of this phenomenon from Allcott and Genzkow, fake news is “intentional disinformation (invention or falsification of known facts) for political and/or commercial purposes, presented as real news” [7]. The

causes of this are complex, both philosophical and epistemological (rampant relativism), cultural (decline in trust in elites), economic (monetization of news in fierce competition due to the advertising income associated with it), technological (the proliferation of platforms which broadcast information) and political (the rise of nationalism and populism, the epitome of which is former American president Donald Trump).

However, perhaps one of the most decisive features of brand-new fake news is vagueness about its source, in parallel with the ever-growing non-specific sources for general news. In the past, fake news used to come from the same sources as news: professional journalists who worked in the media, or politicians or people with access to the media, but filtered by journalistic gatekeeping. This actually works in a similar way nowadays as well, except that the potential number of news broadcasters has expanded considerably, as have authors of fake news. In other words, the Internet and social networks have not only multiplied sources of information, but disinformation as well. In this respect, the difference between fake news (as a specifically journalistic phenomena), hoaxes and rumours (as a broader communicative and sociological phenomenon) has been blurred to a certain extent. Therefore, no recent definition of fake news has identified a definitive professional source for them [8,9], whereas for some they need to be definitely excluded: “the intentional deception of a mass audience by *non-media actors* via sensational communication that appears credible but is designed to manipulate and is not revealed to be false” [10]. In fact, it is clear that in practically all empirical studies such as ours, most fake news refuted both by trusted fact checkers and the media come from unprofessional sources, which are often unidentified and shared by unidentified electronic messaging and not the media. This means there is a need to collaborate in tracking, checking and rejecting fake reports both by means of artificial intelligence tools which automate and systemise the search and identification of patterns or signs of false report formats, such as those being developed for processing natural language [11–15] but also in photography or doctored videos [16,17].

There are various classifications of fake news, although there is no unanimous consensus on what should constitute it. Previously, we looked at a few rather limited definitions of it [6,7], but the term is used in a far broader sense among journalists, politicians and in everyday usage. There are cases when it is blatantly abused. Some authors such as McArdle [18] or Wardle and Derakhshan [19,20] prefer to describe this phenomenon as *news disorder* rather than fake news. Within such disorder, there are three phenomena which should be defined. *Disinformation* consists in news reports that tend to provoke a false impression or belief in the recipient, and do so deliberately, putting the recipient at a potential, at least an epistemological, risk. In contrast to disinformation, there is *misinformation*, which refers to sharing false news, albeit not on purpose, but rather by mistake [21–23]. There is a fine line between the two or it is merely a speculative one. Nevertheless, this should be established, although this does not always happen [24]. A third term is *malinformation*. Here, this concerns information that, albeit true, is aimed at harming a certain person or institution and broadcasting it is not in the general interest [20].

From a computational perspective, it is also interesting to take into account another classification when dealing with fake news: on the one hand, those spread through *traditional news media*, on the other, those spread through *social media*. With the former, style-based techniques and external knowledge are used to detect fake news: approaches try to detect fake news by capturing the *manipulators* in the writing style of news content. With the latter, the stance of users and propagation patterns are considered when detecting fake news. Stance-based approaches utilize users’ viewpoints from relevant post contents to infer the veracity of original news articles. Propagation-based approaches reason about the interrelations of relevant social media posts to predict news credibility. The basic assumption is that the credibility of a news event is highly related to the credibility of relevant social media posts. In this sense, fake news detection on social media presents unique characteristics and challenges that make existing detection algorithms from traditional news media ineffective or not applicable [25].

## 1.2. Proximity and Local Information

While both domestic and international fake news have aroused special interest from academics in recent years. In fact, a 2020 study on the presence of terms in indexed texts in the Web of Science gathers 1147 documents with “fake news” in its title, summary or key words, out of which 640 are articles in scientific journals. The term “fake news” first appeared in 2005, but it only really caught on from 2017 (57 articles) and grew in 2018 (215) and 2019 (224). Meanwhile between 2005–2017 the term was linked to “parody”, “Jon Stewart” (presenter of *The Daily Show*) and “literacy”, from 2018 onwards it was linked to political communication”, “bias”, “verification”, “Twitter”, “social networks”, “populism” and also “Russia” [14]. All this refers only tentatively to the term fake news in a couple of years, after the rise of the term *post-truth*, which was coined between 2015 and 2016 [3], especially during and after the Brexit campaign and for electing Donald Trump in 2016 [2,6,26], and afterwards in the infodemic derived from the global health crisis [27–29]. Local disinformation so far has not been as significant. In fact, some authors, voluntarily overlook the local perspective, arguing that “hoaxes circulate beyond the local scope and most political decisions about the pandemic [ . . . ], are being made in the national and regional scope” [30,31].

Traditionally, local journalism operates in a physical space, which is defined both geographically and legally, whose inhabitants belong to a cultural entity and have their own traditions. Local media create news based on political, cultural or sports events within that limited area [32]. Therefore, local media not only provides news, but also acts as a form of social cohesion in its area and has great responsibility due to its degree of local influence.

Moreover, digital convergence has blurred the line between local communication and has empowered the user to share news by means of instant messaging software and social networks, thereby multiplying the potential capacity to transmit disinformation. In a hyper-connected context, the local news focus breaks down geographical barriers and “creates global interest contents, which are connected and open to consumer preferences unrestricted by geography” [33]. In fact, for Túñez and Guevara [34], geographical proximity, along with the social importance of the source and the breakdown of social consensus, are the three most common news values in mass media news pieces.

Local news is still the main news source for the general public. This is especially true in Spain, where interest in local or regional news surpasses that in other nearby countries by over 15 points, according to an online survey made in 2020 in 40 countries [33]. However, as seen in the same survey, to satisfy this interest, the Spanish go both to local professional journalism sources (73%) and non-journalistic ones [35], whether these be institutions, groups or people (50%). Moreover, three out of ten of respondents answered they went to local messaging groups or sites on social media (Facebook or WhatsApp), forums or discussion groups to be informed. In a similar vein, it was also stated that in 2020 Spain is one of the countries where general concern for false reports has grown [36]. In this respect, the sources that are most distrusted are the social media themselves and electronic messaging applications. Therefore, there is a certain paradox: the high demand for local information and the growing use of informal news sources to meet the need for local news contrasts with the low credibility of informal sources. This justifies an analysis of local disinformation within the technological context of global interconnectivity, which the pandemic and the corresponding infodemic [37,38] that has been created around COVID-19 have worsened the situation.

As for previous works on local disinformation, three accredited Spanish fact checkers (Maldita, Newtral and EFE Verifica), Salaverría et al. [39] made a remarkable analysis of contents of hoaxes detected in the first state of alarm in Spain as a result of the pandemic. Their study considers local hoaxes as a territorial category, along with national and international ones and concluded that it represented 18% of all hoaxes issued on the pandemic, as opposed to almost 50% and 30%, respectively, for the other two categories. Moreover, it states that most local hoaxes detected were not mistakes, but rather deliberately created to deceive. As for the source of these reports, the same study indicated that the broadcasters

were anonymous in half the cases [39], while other research showed that the broadcaster of the hoax was unknown in 91.7% of the contents checked by Newtral on COVID-19 between January and May 2020 [40].

### 1.3. Memetics of Deception

Looking at memes from a communication-oriented perspective, as Shifman [41,42] pointed out, this paper will focus on the significance of the memetic features of fake news, especially local hoaxes and their connection in a global context. Heylighen and Chielens [43] define memetics as the theoretical and empirical science that studies the replication, spread and evolution of memes in order to gain a better understanding and control of social problems depending on the replication and propagations of ideas.

Much of the current literature on memes has a special focus on digital and popular culture using memes as a tool for understanding certain aspects of contemporary culture. These include meme videos on YouTube [44] Internet memes as a set of social practices and from a multimodal perspective [45] musical meme videos on YouTube [46], fake quotations [18] and Internet memes on digital culture and within a context of participatory culture [41,42]. Together, these studies focus on the propagation of digital texts with special reference to popular culture in which common features are shared such as jokes, quotes, rumours, photos, videos, etc. from person to person on the Internet. Overall, these trivial memes are highly successful in terms of going viral. One possible explanation why these types of memes go viral might be whereas people broadly agree on the meaning and values of pop culture, the same cannot be said about religion, politics, race, genre and sex. In this regard, there are few studies on memetic practices when creating hoaxes. Therefore, our work makes a major contribution to research on fake news by showing the memetic practices used in deception based on a sample of memetic hoaxes that have arisen in a local context but which have global connections.

The reason why this research aims to analyse hoaxes from a memetic perspective is that when defining a meme some practices related to propagating hoaxes are described. However, we will first define what a meme is. The meme concept as we understand it currently was the brainchild of the geneticist Richard Dawkins [47] who in his pioneering book, *The Selfish Gene* identified small units of cultural text which spread by leaping from person to person, imitating ideas in the same way that genes replicate themselves. According to Dawkins, examples of memes are tunes, ideas, catch-phrases, fashion, ways of making pots or of building arches. In this respect, memes are not only important due to their ability to imitate, but also because of their structure that characterises how each person interprets meaning, values and ideas in a culture. Therefore, for the purposes of this research hoaxes created by replication or imitation will be called meme hoaxes.

Although memetic practices are not a new phenomenon, the Internet has exponentially increased the potential memes have to propagate. Moreover, the same could be said about fake news. In fact, as Shifman [42] argued, it seems that “we live in an era driven by a *hypermemonic* logic, in which almost every major public event sprouts a stream of memes” within a context of a participatory culture. This means anonymous users can create, alter and share trivial memes in the same way as hoaxes. However, as we will see, it seems that hoaxes have more serious implications than pop culture memes in regard to social problems. In this respect, the type of content that we analyse in this paper could be identified as digital texts created by users and spread from person to person via social media and messaging platforms. Thus, within this framework of convergence and a participatory culture, we argue that there are specific hoaxes that can be analysed as Internet memes as their features match the definition given by Shifman [42]: “(a) a group of digital items sharing common characteristics of content, form, and/or stance; (b) that were created with awareness of each other; and (c) were circulated, imitated, and/or transformed via the Internet by many users”.

Regarding of propagation, Shifman [42] identified six factors (six Ps) that make memes viral: “positivity (humour), provocation of high-arousal emotions, participation, packaging,

prestige, and positioning". In this respect, she found that while not all memetic videos include all six features, the most successful among them usually have at least three or four. In this respect, many scholars agree that humour is fundamental to engagement and success [41,42,44–46]. Nevertheless, while all memes imitate some kind of ideas, it seems that not all imitations are created with the intention of parodying or mocking.

Much of the available literature on memetics addresses the significance of virality in memes. Milner [45] argued "*virality* tends to label a specific type of accelerated information circulation, whereas *memetics* tends to label processes of transformative reappropriation". In this regard, Shifman [41] described three key attributes of virality: firstly, sharing occurs from person-to-person; secondly, propagation occurs at great speed, boosted by social media platforms; and lastly its capability for reaching people by bridging multiple networks. In this respect, Shifman [41] differentiated between the viral and the meme: "whereas the viral comprises a single cultural unit (such as a video, photo, or joke) that propagates in many copies, an Internet meme is always a collection of texts". In other words, viral refers to the potential a content has to be shared, whereas a meme stresses engagement with creativity reappropriation by users who first mutate the viral which then becomes a meme, and it is shared across social media platforms. Similarly, virality is a key concept to understanding the impact of fake news in our society. In this regard, Vosoughi, Roy and Aral [48] proved fake news was shared significantly farther, faster (on average six times faster), deeper and more broadly than true information. Due to the greater capacity hoaxes have for virality, we will focus this research on its capability to mutate and become a meme. In fact, users can mutate and adapt existing hoaxes to their ideologies or particular locations. Therefore, in this study we suggest the propagation and fecundity of fake news could surge as a result of memetic practices. For this reason, one specific aim of our research is to observe how hoaxes could mutate in an extremely localised context where they are shared on social media platforms. Then, we will make an analysis, by tracking other concomitant hoaxes as well as the characteristics of memetics and "glocals" from hoaxes.

#### 1.4. Characteristics of Meme Hoaxes

Dawkins [47] tried to transfer the properties of genes to memes, ones which ensure they are more able to survive: longevity, fecundity and copying-fidelity. Longevity refers to how long a meme survives, fecundity indicates its capacity to reproduce measured by the number of copies made in a certain time, and finally copying-fidelity shows the degree to which a meme is accurately imitated. Nevertheless, Dawkins observed that while fecundity and longevity are easily extrapolated to cultural notions, this was more complicated to do with the third item: memes are, almost by definition transmitted with some alterations, they undergo frequent mutations and mixtures, which in genes are consumed after very long periods. In any case, genes and memes share their ability to adapt to the environment as well as their blind determination to perpetuate themselves: "Selection favours memes that exploit their cultural environment to their own advantage. This cultural environment consists of other memes which have also been selected. The meme pool therefore eventually comes to have the attributes of an evolutionarily stable set; which new memes find it hard to invade" [47]. This means memes are similar to genes in two ways, fundamentally: they are selfish and ruthless. Taking into account these qualities, we will see if hoaxes display them.

Recently, and focusing on Internet memes, Shifman [41] researched the characteristics of digital memes and concluded that they are a group of digital items which share the common characteristics of content, form, and/or stance. The first dimension refers mainly to the content, both in terms of the ideas and ideologies conveyed by the meme. The second feature relates to the visual, text and/or audible form of the physical message. Lastly, Shifman initially presented the stance dimension to refer to the position adopted by addressers in relation to the text, its linguistic codes, the addressees and other potential speakers. As with form and content, "stance is potentially memetic; when re-creating a

text, users can decide to imitate a certain position that they find appealing or use an utterly different discursive orientation" [41]. In line with these characteristics, a preliminary study on political hoaxes as memetic practices was undertaken by Utami [49] who concluded that hoaxes cannibalise the original information from a content and turn it into a new message based on existing beliefs that can threaten participatory democracy.

In the last decade Internet memes have become powerful agents for globalisation. According to Shifman [41] the concept of globalisation could have a positive connotation when it applies to memetics because memetic practices can be interpreted as way of stressing the uniqueness of narratives from local cultures rather than as a sign of cultural homogenization. However, it should be stressed that globalisation arose in the change from the analogic to digital era. From a critical perspective it could be defined as a form of Western imperialism in which there is a one-way economic flow from the West in general and from the United States in particular, which results in homogenization and Americanization. However, globalisation as a one-way rigid system was challenged by the concept "glocalization" coined by Robertson [50]. "Glocal" refers to the idea that locals instead of accepting or rejecting global models, combine the global with the local to create or adapt their cultures, whose result is multifaceted and hybrid cultures. In this vein, Shifman [41] defines user-generated globalization as practices in which memes are translated, customised and distributed across the globe by ordinary Internet users.

## 2. Materials and Methods

The aim of this research is to describe, evaluate and measure the memetic capacity a hoax has by analysing a micro sample in a restricted geographical area to other nearby or far off places. To do so, topics must be identified as well as their capacity for memetic infection. In this respect, the major objective of this study is to research the memetics of deception based on a "glocal" sample of hoaxes registered in the first year of the COVID-19 pandemic from March 2020 to March 2021. Thus, firstly, we will observe the local environment as the ideal setting for creating and broadcasting unverified information due to the nature of proximity and the confidence people have in local sources. Secondly, we will address the capability local hoaxes have to embrace memetic practices in which locals create and spread global hoaxes which in this research we have defined as "glocal" meme hoaxes, which have been mutated and adapted to local details and circumstances. Thus, we have set out the following specific objectives:

1. To classify local hoaxes following the distinction between disinformation, misinformation and controversy.
2. To identify the existence of meme hoaxes as put forward by Dawkins [47]: longevity, fecundity and copying-fidelity.
3. To describe the characteristics of meme hoaxes in terms of content, form and stance, according to Shifman [41].
4. To establish a scale for the meme charge of a hoax, based on an analysis and evaluation of its features and its dissemination.

Our research method combines quantitative and qualitative techniques. The local sample was obtained by monitoring three primary sources: digital media (press, radio and TV) in the Alicante province, monitoring refuted publications on the websites for the fact checkers Maldita, Newtral, EFE Verifica and AFP (all of whom are members of the International Fact-Checking Network (IFCN) from the Poynter Institute for Media Studies), restricting searches to the municipalities in the province, and open tracking of this phenomena on social media, using the terms: "hoax", "Alicante" and "fake news". When monitoring, hoaxes have been included which exclusively mention and concern municipalities in the Alicante province from February 2020 until February 2021 and a final sample of 35 hoaxes was yielded (Table 1). Alicante is a province in SE Spain, which is part of the autonomous region of Valencia whose population comes to almost two million. The capital is Alicante, with over 300,000 inhabitants and the province has several built-up areas with a population of over 50,000 with industrial towns inland (Elche, Elda, Alcoy)

as well as tourism hotspots on the coast (Torrevieja, Benidorm, Denia), where there is a significant foreign population, whether these are residents or seasonal. Green identifies the hoaxes that have arisen from repeated pre-existing other ones and therefore in this research they are considered as “meme hoaxes”.

**Table 1.** Sample of the research. Source: prepared by the author.

ID	Hoax Date	Town	Topic and Link to Denial	Typology	Clone Degree	Medium	Memetics
#1	4/2/2020	San Vicente	<a href="#">Health Crisis</a>	D	High	Social media	Yes
#2	19/2/2020	Alicante	<a href="#">Collateral Effects</a>	D	Low	Social media	No
#3	2/3/2020	Elche	<a href="#">Health Crisis</a>	D	Low	Social media (WhatsApp)	No
#4	11/3/2020	Teulada	<a href="#">Health Crisis</a>	D	High	Social media	Yes
#5	13/3/2020	Elche	<a href="#">Health Crisis</a>	D	High	Social media	Yes
#6	13/3/2020	Crevillente	<a href="#">Health Crisis</a>	D	Medium	Social media	No
#7	15/3/2020	Alcoy	<a href="#">Health Crisis</a>	D	High	Social media	No
#8	22/3/2020	Denia	<a href="#">Health Crisis</a>	D	Medium	Social media	No
#9	22/3/2020	Petrel	<a href="#">Health Crisis</a>	D	Medium	Social media	No
#10	3/4/2020	Jávea	<a href="#">Health Crisis</a>	D	Medium	Traditional News Media (Press)	No
#11	9/4/2020	Torrevieja	<a href="#">Health Crisis</a>	D	Low	Social media	No
#12	18/4/2020	Denia/Moraira	<a href="#">Collateral Effects</a>	D	High	Social media	Yes
#13	21/4/2020	Alicante	<a href="#">Collateral Effects</a>	D	Medium	Social media	No
#14	26/4/2020	Alcoy	<a href="#">Health Crisis</a>	D	High	Social media	Yes
#15	28/4/2020	Alicante	<a href="#">Other</a>	C	-	Traditional News Media (Press)	No
#16	14/5/2020	Alicante	<a href="#">Health Crisis</a>	C	-	Social media	No
#17	8/6/2020	Santa Pola	<a href="#">Other</a>	D	Low	Social media	No
#18	10/6/2020	Santa Pola	<a href="#">Other</a>	C	-	Social media, Other	No
#19	3/7/2020	Benidorm	<a href="#">Other</a>	D	Low	Social media (Facebook)	No
#20	7/7/2020	Torrevieja	<a href="#">Health Crisis</a>	D	High	Social media (Instagram)	Yes
#21	9/7/2020	Santa Pola	<a href="#">Health Crisis</a>	D	Low	Social media	No
#22	14/7/2020	Santa Pola	<a href="#">Health Crisis</a>	D	Low	Social media	No
#23	24/7/2020	San Juan	<a href="#">Health Crisis</a>	M	-	Official source	No
#24	29/7/2020	Orihuela	<a href="#">Health Crisis</a>	D	High	Social media	Yes
#25	29/7/2020	Calpe	<a href="#">Health Crisis</a>	D	Medium	Social media	No
#26	5/8/2020	Benidorm	<a href="#">Other</a>	D	Medium	Social media (Twitter)	No
#27	24/8/2020	Novelda	<a href="#">Health Crisis</a>	D	High	Social media	Yes
#28	1/10/2020	Torrevieja	<a href="#">Health Crisis</a>	D	Low	Social media	No
#29	26/10/2020	Villena	<a href="#">Health Crisis</a>	D	Medium	Social media (WhatsApp)	No
#30	04/11/2020	Alicante	<a href="#">Health Crisis</a>	M	-	Official municipal source	No
#31	8/1/2021	DENIA	<a href="#">HEALTH CRISIS</a>	D	High	Social media	Yes
#32	9/1/2021	ALCOY	<a href="#">OTHER</a>	D	High	Social media	Yes
#33	16/1/2021	VILLENA	<a href="#">HEALTH CRISIS</a>	D	High	Social media	Yes
#34	23/1/2021	Elche	<a href="#">Health Crisis</a>	D	Low	Traditional News Media (TV)	No
#35	30/1/2021	Orihuela	<a href="#">Collateral Effects</a>	D	Low	Blog	No

The reader should bear in mind that a local sample (Table 1) might not seem broad enough, but it is particularly significant for achieving one specific aim of this research: the capability creators have to adapt hoaxes from the global context to local cultures and circumstances.

This research has been divided into two parts. The first part deals with the analysis of the whole sample: the 35 local hoaxes. The second part focuses particularly on 11 hoaxes that can be considered as memes. Firstly, and to classify these hoaxes, we analysed what kind of deception was depicted by fake news: disinformation, misinformation and controversy. Secondly, and in order to achieve the second specific aim in the second part of this research, we measured how many hoaxes were based on original content and what percentage of hoaxes were replicated, mutated or imitated pre-existing ones.

Once the memetic practices were identified and measured, we analysed the qualities they had in order to find out what role longevity, fecundity and accurate imitation played. Finally, we focused on the meme traits to describe their form, content and stance. The 35 hoaxes were collected manually and entered in Excel. The sample was coded by the third author of this paper, and it was reanalysed by the first and second author of this study to ascertain reliability. Overall, we agreed 95% of the results of the code. This will enable us to assess the memetics of deception and their virality: from a single local hoax to many cases, from the most local to the most remote, some of which may be previous ones, and some may be replicates. This will enable us to gain a greater insight into this worldwide deceptive phenomenon.

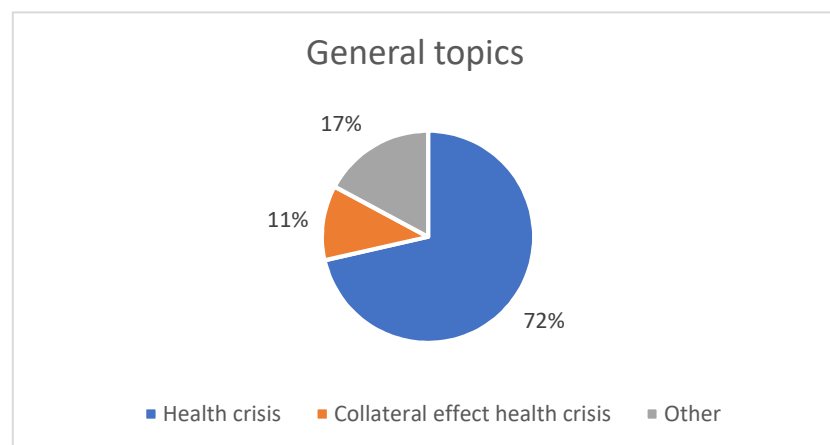
### 3. Results

This section may be divided by subheadings. It should provide a concise and precise description of the experimental results, their interpretation, as well as the experimental conclusions that can be drawn.

#### 3.1. Topics and Classifying Local Hoaxes

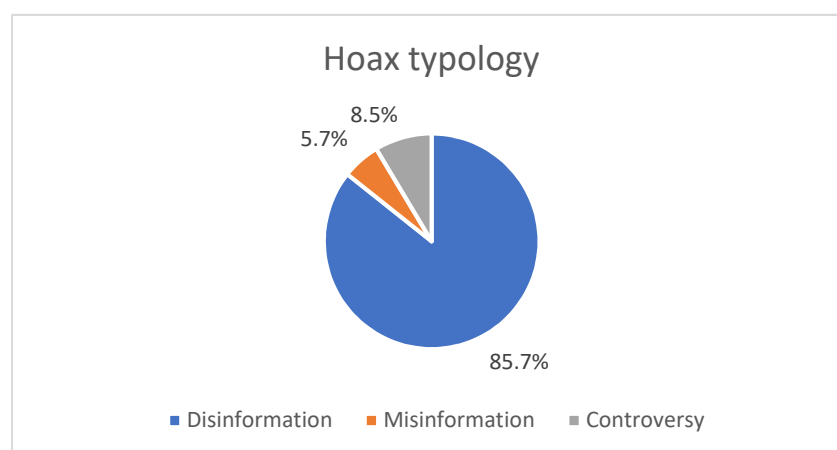
In the method for selecting a sample there were a total of 35 hoaxes. From these, 27 (77%) were originally shared by electronic messaging platforms (WhatsApp, Telegram) and social media (Twitter, Facebook, Instagram), whereas one appeared on a blog, four in traditional news media (11.4%) and three in official media (8.6%).

Out of the 35 hoaxes registered (Table 1), 25 of them (72%) had a direct relationship with the health crisis (see Figure 1). Out of the 10 remaining ones, four may be considered as collateral or related matters (a different kind of outbreak, the recovery of the environment due to lockdown, closure of a health centre due to a contract or logistics, governmental lockdown not just a health measure, but a political one too). Only six hoaxes bore no relationship to the COVID-19 health crisis, and they referred to the false kidnapping of a young woman and politics unrelated to COVID-19, whether this be municipal, national or international, but with a local repercussion.



**Figure 1.** General topic in hoax. Source: prepared by the author.

On a more detailed analysis of the characteristics of the hoax we detected that 85.7% (30 out of 35 cases) corresponded to the disinformation category. That is, they imply an express intention to deceive or cause injury. The remaining cases are shared between misinformation (two cases, 5.7%) which means false information derived from an error, and cases of controversy in the public domain (political or general public) difficult to verify (three cases, the remaining 8.5%) (see Figure 2).



**Figure 2.** Hoax typology. Source: prepared by the author.

If we just consider cases of disinformation (30), the percentage of shares firstly on social networks and then by electronic messaging goes up to 93% (28). These figures are in keeping with other studies on fake news whose area is not specific to any locality. Brennen et al. [51], for example, worked on a sample of 225 pieces from a corpus of English-language fact-checks gathered by First Draft News, focusing on content-related false or misleading news. The corpus gathered articles up to the end of March 2020 from fact-checking contributors from two separate networks: The International Fact-Checking Network (IFCN) and Google Fact Checking Tools. Their analysis revealed that most (88%) of the sample appeared on social media platforms. A small amount (also) appeared on TV (9%), was published by news outlets (8%) or on other websites (7%). Our results were also in keeping with those from Salaverría et al. [39] who analysed 292 pandemic-related hoaxes that were refuted by three accredited fact-checkers in Spain (Maldita, Newtral and EFE Verifica), in the first month of the state of alarm decreed by the Government (14 March 2020–13 April 2020). They found that the vast majority (89.1%) were shared on the social networks, well ahead of journalistic media (4%) and other channels for interpersonal communication (6.9%), such as, for example, text messages or emails.

### 3.2. Hoaxes as Memetic Practice

Secondly, we tried to identify whether meme hoaxes existed in the terms set out by Dawkins [47] longevity, fecundity and copying-fidelity. We can state that out of the 30 disinformation hoaxes registered, 13 (43.3%) in the restricted local area of our study, a Spanish province with a population of under two million, may be considered as meme hoaxes (see Table 2).

Firstly, longevity refers to how long a meme survives. In this respect, this marked one limitation of this research as our sample only covered the first year of the pandemic and most hoaxes were related to this. Therefore, this prevented us from making a long-term longevity analysis. The health crisis is exceptional macronarrative news, which in turn is associated with narratives that are also unedited: lockdown, perimeter closures of facilities, localities, regions or countries, masks and social distancing, collapse of the health service and mass vaccinations. Each of them has created a lot of news but also a lot of specific fake news. We do not know which may be in circulation in any given period although it is reasonable to assume that fake news are opportunists and take advantage of a news situation to strike quickly and have a greater impact. In this respect, it may be different from other memes that Dawkins was concerned with and the whole theory of memetics. Indeed, Dawkins [47] discussed very long-living memes, such as ideas, beliefs and rituals, and other more short-lived ones such as fashion, tunes and catch-phrases. Shifman [42] when the Internet era was in full swing, established meme genres such as memes Photoshop troll reaction, photo fads, flash mobs, lip-synchs, recut trailers, etc. Disinformation is highly unusual because it aims to deceive recipients about a real situation, and not just to create

opinions, entertain them, surprise them or encourage them to consume something. For this reason, we think the time the refuted news occurs in could be pivotal in determining the longevity of a local hoax, which cannot be extrapolated to other memes: it is our view that, in general, this prevents it from being reproduced literally and diminishes its capacity to being adapted to other localities.

**Table 2.** Local hoaxes with memetic qualities. Source: prepared by the author.

ID	Date and LINK	Town	Theme	Longevity (Outside the Sample)	Fecundity (Within the Local Sample)	Fecundity (Outside the Local Sample)	Copying-Fidelity
#1	4/2/2020	San Vicente	<u>Health Crisis</u> (first case in town)		X	X	X
#4	11/3/2020	Teulada	<u>Health Crisis</u> (first case in town)		X	X	X
#5	13/3/2020	Elche	<u>Health Crisis</u> (school closure)		X	X	X
#12	18/4/2020	Denia/Moraira	<u>Collateral Effects</u> (dolphin watching)		X	X	X
#13	21/4/2020	Alicante	<u>Collateral Effects</u> (elderly people robbed)	X		X	X
#14	26/4/2020	Alcoy	<u>Health Crisis</u> (perimeter closure of town)		X	X	X
#20	7/7/2020	Torre Vieja	<u>Health Crisis</u> (local bars closed due to outbreak)		X	X	X
#24	29/7/2020	Orihuela	<u>Health Crisis</u> (local bars closed due to outbreak)		X	X	X
#26	5/8/2020	Benidorm	<u>Other</u> (Kidnapping)	X		X	X
#27	24/8/2020	Novelda	<u>Health Crisis</u> (local bars closed due to outbreak)		X	X	X
#31	8/1/2021	Denia	<u>Health Crisis</u> (perimeter closure of town)		X	X	X
#32	9/1/2021	Alcoy	<u>Other</u> (Yellowstone Wolf's grandparents)		X		X
#33	16/1/2021	Villena	<u>Health Crisis</u> (school closure)		X	X	X

Moreover, fecundity indicates its capability to be reproduced and is measured by the number of copies made in a certain time. Our selection of the 13 high-level meme hoaxes took special note of this circumstance, especially if fecundity even occurred within a local sample, which is very marked geographically and in a short time span. Provisionally, we could assume that in meme hoaxes it seems that longevity and fecundity are inversely proportional: a very fecund hoax cannot be prolonged for a long time, because the more it is shared, the more likely it will be refuted and thus lose credibility and impact (at least as serious news, albeit not as a parody). However, an occasional hoax such as robbing an old man or kidnapping young women may come back a long time after it occurred because as we forget this enables the memetic effect to reactivate at any time. Two of the hoaxes in our sample belong to this classification. Some fact checkers coined the term zombie hoaxes to refer to such cases [52]. In particular, they give the example of alerts about child kidnapping, rape and theft. This is fake news which have been repeated both in Spain and in Spanish-speaking countries in episodes since at least 2012, thereby supplanting the achievements of the police in these countries.

Finally, copying-fidelity shows the degree to which a meme is accurately imitated. Dawkins observed that by definition memes are transmitted with some alteration, undergoing frequent mutations and mixtures. The 13 memes in our sample (Table 2) copy part of the information and mutate it to create a new hoax. In this respect and, generally speaking, the contents or topics of the hoax are preserved, but the locality where the schools or bars were closed or where the perimeter was established was changed. As a result, the meme

hoax copies the idea and replicates it in a new locality so that the alarm created by the hoax is greater thanks to the proximity effect which occurs with local news.

### 3.3. Characteristics of Meme Hoaxes in Terms of Content, Form and Stance

In order to describe the traits of meme hoaxes we will follow the definitions given by Shifman [42] with this categorisation: form, content and stance.

#### 3.3.1. Form

The hoaxes subject to memetic practices registered in the sample are multimodal. That is, they combine a range of communication systems, especially visual and linguistic ones. As for format and following the qualities of memes given by Dawkins [47] the high level of copying-fidelity in the sample is remarkable, as seen in the examples from the sample, as well as the mutations to “localise” the hoax. The most remarkable practice is inter-textuality. That is, literally copying news from the digital newspapers, maintaining the images and mutating the text to adapt the hoax to local features. That is, it concerns “localising” the hoax and therefore imbuing it with the value of local news. In this way, it stands out as being exclusive as well as for the capacity of the locality to be the protagonist in an important event in a global problem such as the pandemic. As a result, the meme hoax boosts the importance of local news since the virus, is now viewed as very close and so this may cause greater alarm than if the first case of COVID occurred in a far off and unknown place. The example in illustration 1 shows how the format of the original news and the headline was changed in order to “localise it”. The image on the right is the original news and the headline reads: “The Wuhan coronavirus. The UK advises nationals to leave China if they can”. However, the hoax repeats the news in the newspaper, *El País*, and there is a mutation in the headline showing: “First confirmed case of coronavirus in the Alicante locality of San Vicente del Raspeig”. On the right, Figure 3 shows the authentic news (“UK advises nationals to leave China”), and on the left the fraudulent remake. That is, “First Coronavirus case in the locality of San Vicente del Raspeig (Alicante)”.



Figure 3. Example of the form of meme hoaxes. Source: *Maldito Bulo*.

In this respect the “local” meme hoax fulfils the function of local journalism in order to make news relevant due to its proximate nature. These practices consist of changing the format and also work to stress positive connotations, such as dolphin sightings seen in local, national or global ports as a result of the lockdown.

#### 3.3.2. Content

##### Content Concordances and Stance within the Sample

Among the disinformative hoaxes from the local sample, we can find important coincidences regarding content beyond the general topic, which may be grouped into

large blocks (above all, the association with coronavirus). They are highly significant, because this type of redundancy (the copying/fidelity trait outlined by Dawkins) in such a localised sample are more than likely signs of memetic potential beyond the sample (as has been demonstrated).

Looking at the traits defined by Shifman, the characteristics of the contents refer to ideas or ideologies expanded by the memes. In this respect, the meme hoaxes in themselves are part of five meme plots (see Table 3), which are described in the table.

**Table 3.** Contents: meme plots within the sample. Source: prepared by the author.

Plot	Nº of Cases	Localities
The report of the first case of coronavirus in the locality or region	2	San Vicente del Raspeig and Teulada
Dolphin sightings in the marinas of several cities as a result of the emergence of wildlife due to locking down most of the world population	2	Denia and Moraira
The perimeter closure of localities due to the high incidence of the virus	2	Alcoy and Denia
The closure of discos because of infections between staff and customers	3	Torrevejeja, Orihuela, Novelda
Closure of educational centres	2	Elche and Villena

In relation to stance (one of the meme parameters, according to Shifman [42] we recall it refers to an approach or attitude transmitted by the meme recipients receive and make them either adopt it when it is shared again or change and use it for other purposes, with another approach.

To give an example: lockdown in a certain locality (plot 3) or closure of leisure venues (plot 4) or educational centres (plot 5) is the content, but in any of these events the stance may be (1) to praise local government for its precaution in doing so or (2) to criticise it for being overzealous, restricting our liberty and destroying the economy. If we focus on these 11 cases from the sample that has been duplicated or triplicated within it, we can see that the stance is always the same within identical content.

That is, at least, our experience in our study, but not necessarily outside it. One example of when the stance varies from one hoax to another is when form and content are similar as in the following: on the 23 March 2020 a message in Spanish was shared on the social networks that showed a photo of dozens of coffins in an industrial unit. This was attributed to the high rate of mortality derived from the coronavirus pandemic. This photo was intended to warn about the situation in Italy at the time and raise awareness in Spain of the need to strictly comply with the lockdown. On the 2 April this photo, however, showed fake news. The text implied that it was taken in Spain and the stance was to blame the government for hiding the magnitude of the tragedy and for its incompetence. In reality, the photo was taken in October 2013 and the bodies were of immigrants who had drowned off the coast of Lampedusa after having been shipwrecked [53].

#### Content Concordances and Stance Outside the Sample

The first case of hoaxes registered in Alicante about coronavirus concerns the previously mentioned imposter content (Figure 3). As we saw, this is a case of a local hoax (San Vicente del Raspeig) whose reference is news published in a Spanish national newspaper (*El País*) which is in the international section of the paper (the news refers both to Wuhan, in China, and the United Kingdom). For this reason, in this research we call it “glocal meme hox” a specific type of meme hoax which connects the global context with local details.

Just two days before, a similar hoax on the first infection in Galicia, specifically in Noia (Pontevedra), resorted to a similar strategy. In this case by supplanting a regional leader (*La Voz de Galicia*, 2/2/2020), as can be seen in the Figure 4, that shows two pictures;

the first one is the hoax replicated and mutated, and the second one is the news published in the newspaper *La Voz de Galicia*.



**Figure 4.** Example of memetic practice of the “glocal” meme. Source: Maldito bulo (<https://cutt.ly/JvP8nwW> (accessed on 4 June 2021)).

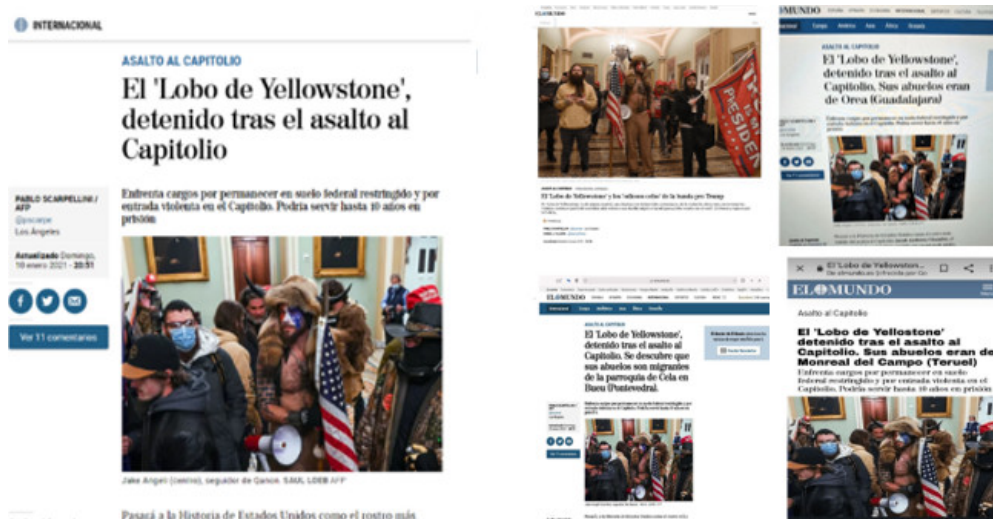
One day later, on the 3 February 2020, but a day before the case in *El País* about San Vicente, a WhatsApp message showed a doctored image broadcast by RTVE, the Spanish public television channel, with a false report about the first case in Huelva (Figure 5).



**Figure 5.** Doctored image from RTVE which was shared on WhatsApp. Source: Diario de Huelva, 3 February 2020 (<https://cutt.ly/lvP8RpA> (accessed on 4 June 2021)).

Another case is a local hoax (Alcoy) that replicated shared hoaxes almost simultaneously in other Spanish localities, in order to gain international status (Figure 6). The storming of the Capitol in Washington (6/01/2021) put Jacob Anthony Chansley (also known as Jake Angeli, “QAnon Shaman”, “Q Shaman” and “Yellowstone Wolf”) onto the world map. A news piece about him in the national paper, *El Mundo* (10/01/2021) was doctored and adapted to various highly disperse Spanish localities, reporting that his grandparents came from each of them (Monreal del Campo (Teruel), Cela de Bueu

(Pontevedra) and Orea (Guadalajara) and Alcoi (Alicante). Not only was the form and content, but the stance too the same in all cases: linked a biographical detail related to the specific locality with interest in world news.



**Figure 6.** Real images from *El Mundo* (10/01/2021) and imposter content adapted to four different localities. Source: Adaptation from *Maldito Bulo*.

#### Content Concordances and Stance within and Outside the Sample

As for the dolphin sightings, this was a paradigm and was used to illustrate the hoax, which appears cloned inside the sample (Denia and Moraira) but outside it as well (Barcelona and Palma de Mallorca). Due to collaboration initiatives between fact checkers all around the world, out of the 30 hoaxes in our sample, 5 were collected in international databases such as those promoted by the International Fact Checking Network of the Poynter Institute and LatamChequea, which gathers refuted hoaxes by fact checkers all over Latin America, Spain and Portugal. In some of these versions, the viral, memetic nature of the hoax was shown (see Figure 7).



**Figure 7.** Example of refuted hoax from the Poynter Institute. Source: Poynter Institute, 18/04/2020.

However, the database from the Poynter Institute gathered up to five more hoaxes (see Figure 8) which were related to dolphin sightings on dates immediately before our sample (18/04/2020). One of these was located in Veracruz (Mexico) on the 13 April, and the other four referred to dolphin sightings in the Venice canals, although there was no date for Italy, but they were reported in Ukraine (18/3/2020), Taiwan (19/03/2020), Portugal (21/03/2020) and India (22/03/2020). The three meme plots (those located off the waters of Italy, Mexico and Spain) were documented with video images taken out of context, which

were not taken on the dates on which the dates are claimed they were taken. Hence, they were not the result of humans withdrawing from natural areas due to lockdowns, which affected almost half the world population in spring 2020. We believe it is not too rash to assume there was a connection between these three plots, which could be confirmed in a presumably local event (Venice, Veracruz, Barcelona, Palma de Mallorca, Denia) going viral as it captured the collective imagination.

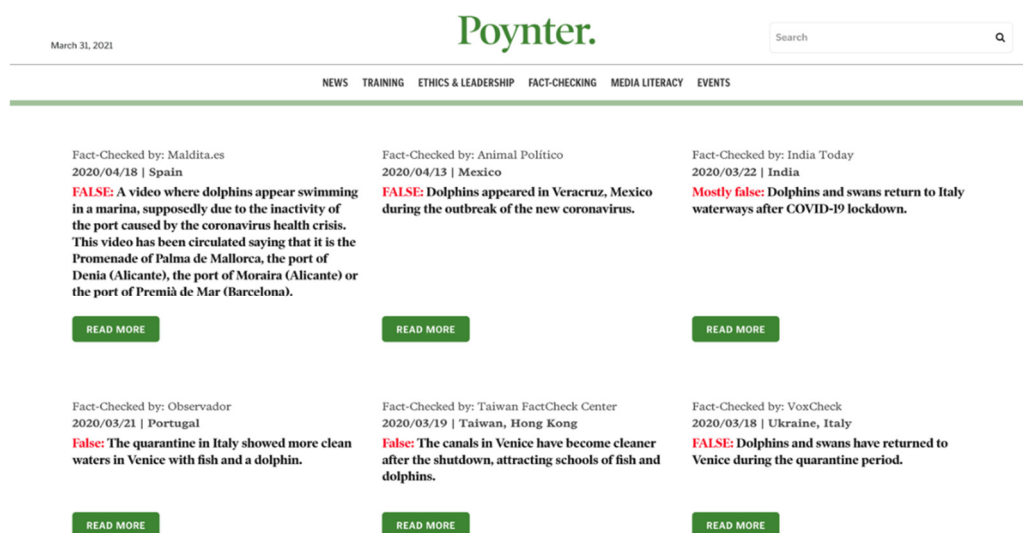


Figure 8. Examples of refuted hoax from the Poynter Institute. Source: Poynter Institute, 18/04/2020.

Here, the stance has a positive connotation: it is good news, almost a relief that nature has reclaimed areas we have stopped encroaching on due to lockdown. However, this same meme charge, with a changed polarity may help far more harmful causes, such as conspiracy theories about the origin of the virus, bizarre remedies that prevent infection or help to cure it. This may lead to greater distrust or negation about the health measures taken to prevent infection, or about the effects of the vaccines, etc. In this respect, the Poynter Institute provides an animated world map in which one can see how five pieces of fake news spread worldwide, although they were not restricted geographically (masks cause hypoxia, the death of the first subject who took an experimental vaccine, helicopters fumigate to combat the virus, etc., Poynter Institute (Figure 9) they spread across the globe in a short period of time.

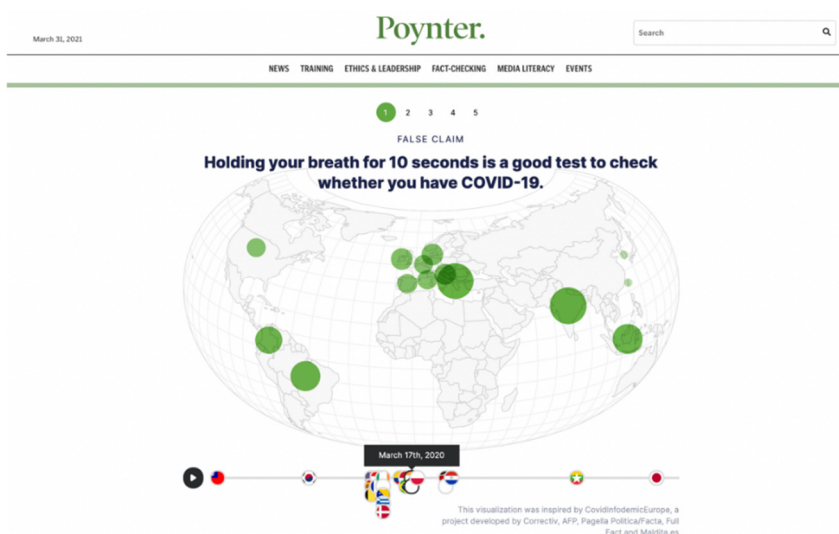


Figure 9. View of memes which are repeated in a range of territories. Source: Animation from the Poynter Institute <https://bit.ly/3fY8c27> (accessed on 4 June 2021).

### 3.4. A Memetic Classification Proposal for Local Hoaxes

The fourth specific objective was to establish a “glocalization” scale for local hoaxes. That is, for their memetic potential. After analysing the memetic expansion of the hoaxes registered, our research proposed three levels of meme charge for local hoaxes that we describe in Table 4.

**Table 4.** Proposal for classifying memes. Source: prepared by the author.

Level	Description	Traits	Examples
High	The contents (obligatory) and if applicable the form and stance of the hoax (optional) expanded inside the local sample and outside it also to other distant geographical localities.	Very High Fecundity High Copying/Fidelity Indeterminate Longevity	Dolphin watching 1st case in town Town Lockdown Facility Lockdown
Medium	The contents are similar to others registered in other localities outside the sample, although less strict in terms of form, stance and dates of appearance.	Content Medium Fecundity Medium Copying-Fidelity High Longevity	Fake zombies, which adhere to urban legends periodically revived: kidnappings, theft, swindling
Low	The local hoax refers to a highly specific local circumstance, which is related to unique events, facilities or very specific people.		Event with a strong local mark in a close narrative: Elche (#3), Orihuela (#35)

If we look at the hoaxes as a whole that have the qualities of a meme it can be seen that except for two examples, the rest have medium and high charges for establishing connections and being replicated in other territories.

## 4. Conclusions

This research has shown that the memetic nature of hoaxes, we saw on an international scale with news not restricted by geography, are produced in the same way as on a local level: there is a contagious effect of hoaxes that have spread elsewhere in the local area (closure of leisure venues due to infections, closure of schools or health centres due to outbreaks, resurgence of nature reclaiming land from humans who have withdrawn from it due to lockdown, etc.) and which are extrapolated, adapting them to the circumstances of other localities. In this respect, the results indicated that 43.3% of those registered in the local area recorded memetic qualities.

As for the characteristics of the sample, especially the channels by which hoaxes spread, it was seen that the channels that broadcast fake news (mostly social networks and electronic messaging platforms, accounted for 77% of cases in our study) have a determining role, in their credibility, and this is far below that of traditional media. However, we saw that in our study local fake news can be dressed up as legacy media or reliable sources; out of the 30 cases of disinformation, 8, (over a quarter, 26.6%) constitute imposter content. That is, they imitate and supplant newspaper headlines, television chains or official sources, whether these be public or private. As for the topic, both the hoaxes and meme hoaxes registered were mainly related to the pandemic and collateral effects derived from this. This shows how important the health crisis was in the memetic practices in the lie. These results opened up a future line of research in which hoaxes can be analysed from the perspective of memetic theory.

Once the memetic qualities of Dawkins [47] as well as the characteristics of the digital memes from Shifman [42] were applied to the sample, it was concluded that, primarily, fecundity and the ability of the hoaxes to mutate were the most significant qualities of the meme hoaxes registered during the year of sampling. However, longevity was not covered and was a quality that required a longer period of observation. Therefore, this analysis revealed the need to keep researching this quality in future in order to observe

the memetic qualities hoaxes have and their capacity to spread their ideology over time. Moreover, regarding the traits provided by Shifman, it was concluded that the format of the meme hoaxes coincided with that of the original news that was replicated and changed by users in some regard; mainly, users mutated the text to adapt it to local idiosyncrasies and to make its impact greater due to the effect of providing information about the local area. This trait was also reflected in the contents of the meme hoaxes since it is typical to “glocalise” the ideas in a hoax. Moreover, the memetic capacity of hoaxes in the sample on establishing five plots for contents (concordances in the sample), which were replicated in the territory, by solely changing the locality in which the hoax was produced.

Local hoaxes are not only carried out in bad faith, as one might expect, but they are also opportunistic, adaptable, highly contagious and occasionally careless in terms of the form they take (the latter is a finding we have not been able to address here: this remains a topic for future publications). What our research showed is that a very local hoax, that is, one associated with a very specific area, could simultaneously become part of a globalised memetic plot, because the local dimension is no barrier to fecundity. Therefore, one locality may be substituted for another, with slight adaptations, while keeping highly faithful to the essence of the hoax that inspired it. In this respect, it could be concluded that local hoaxes, according to their contents have a certain meme charge that gives them a high, average or low-level content in terms of being replicated, mutated and “glocalised”. This means there are special points that are so deeply rooted in local idiosyncrasies that its meaning cannot be extrapolated to global problems. However, this conclusion opened another line of research in order to find out which topics and circumstances are inherent to replicating hoaxes from memetic practices, as already demonstrated by the fact checker Lead Stories in Belgium.

The shortcomings in this study are its exploratory and its highly descriptive nature. Moreover, its approach is mainly sociological; this study only describes why hoaxes can be analysed as memetic practices from a cultural and sociological point of view. However, one important line of future research will be to provide a context for the technology to identify manipulation in the digital content spread in the virtual domain.

The results revealed that local hoaxes were not information that exclusively adhered to a non-transferable local circumstance, but rather on many occasions it led to other hoaxes that also spread to different areas, which were easily adaptable to the local context. In this respect, this research showed the need for an approximation of the hoax phenomena from the conceptual framework memetics provides: the memetics of deception.

**Author Contributions:** Conceptualization, R.R.-F., C.S.-O. and E.S.-B.; Funding acquisition, R.R.-F.; Investigation, R.R.-F. and T.H.-M.; Methodology, C.S.-O. and T.H.-M.; Validation, E.S.-B.; Writing—original draft, R.R.-F. and C.S.-O.; Writing—review & editing, T.H.-M. and E.S.-B. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research was funded by Digital Intelligence Center (CENID), a project of the Provincial Council of Alicante, University of Alicante and The Miguel Hernández University of Elche (2020), grant number CONVENIOINTELIGENCIADIGITAL.

**Data Availability Statement:** Not Applicable, the study does not report any data.

**Conflicts of Interest:** The authors declare no conflict of interest.

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