

# The Imaginary of an Invisible Enemy: The SARS-CoV-2 Virion on the Spanish TV News

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*During epidemiological crises, traditional media have played an essential informational role. In this paper we analyze the imaginary of COVID-19 and, specifically, of the representation of the virion of the SARS-CoV-2 virus through news reports from the main Spanish TV channels. This virion, represented as an “invisible enemy” that has confined half of the world population, is presented in the news using 3D illustrations that highlight its roughened surface and elongated spikes ending in tentacles, an image*

*that does not correspond to scientific illustrations. These and other attributes suggest that the imaginary of COVID-19 has inherited the imaginary of other previous episodes of coronaviruses being not scientifically accurate but motivated by the journalistic objective of representing the main characteristics of the virus and the severity of the danger.*

**Keywords:** visual communication, health risk communication, television news, COVID-19, pandemic.

**O**n March 11, 2020, the World Health Organization (WHO) declared COVID-19 a “pandemic” (Ministerio de Sanidad, 2020a: 4); that is, a “worldwide spread of a new disease” (WHO, 2010). The COVID-19 crisis poses some specific challenges related to its communication strategies and features, besides some general characteristics shared with other health risk communication cases.

In recent years, studies on health communication have addressed issues such as the effects of health public campaigns on general population (Roy *et al.*, 2019; Wakefield, Loken, and Hornik, 2010), their educational value (Ratzan, 2020) or the efficacy of health communication (González-Pacanowski, Medina-Aguerreberre, and Iglesias García, 2017).



Regarding communication of news on epidemics and pandemics, most of the studies analyzed as newspaper and, recently, social media content (Liu and Han, 2013; Pan and Meng, 2015; Seltzer *et al.*, 2015; Fung *et al.*, 2016). It should be noted that most of these studies are content analysis on the text or oral messages published or broadcasted by media, even when the media contains images, as television, newspapers, and social media (Silva and Massarani, 2010; Fogarty *et al.*, 2011; Vasterman and Ruigrok, 2013; Walters *et al.*, 1997).

The importance of images related to the effects on health persuasion has been proved by several authors (Fabricio, 2019; Gerlach, 2019; Houts *et al.*, 2006; Luth, Jardine, and Bubela, 2013; Manno *et al.*, 2018). Nevertheless, there is a scarcity of studies on images related to epidemics and pandemics in media communication (Fausset, 2018; Klemm and Hartmann, 2014).

Some studies on images related to epidemics have shown that *provocative visuals* were significantly present in US television newscasts during the Ebola crisis (Ihekweazu, 2016); images elicited “greater [persuasive] responses when people were exposed to a vivid threat, relative to a pallid threat” (Blondé and Girandola, 2018: 36); and colorized versions of black and white images have been used in this context for aesthetic purposes, as well as for rhetorical purposes (Richards and Davis, 2005).

In previous epidemics and pandemics, some images have acquired an emblematic status in television newscasts, as the hazmat suit and masked people in 1995’s Ebola outbreak (Ungar, 1998), and 2003’s SARS epidemic (Joye, 2010), where “the element of (global) panic was best illustrated through images of anonymous people wearing surgical masks” (Joye, 2010: 595). The petri dish and the red color were used in television during the swine flu pandemic in 2009 “to convey alarm and danger” (Luth, Jardine, and Bubela, 2013: 8). This was consistent with the conceptualization of the SARS virus in 2003 as “a killer” and the metaphorical use of military terminology in the risk health crisis (Wallis and Nerlich, 2005: 2632).

## THE COVID-19 CRISIS AND THE IMAGE OF THE SARS-COV-2 VIRION

Casero-Ripollés points out the predominance of traditional media, especially television news, throughout the COVID-19 crisis, since they are the ones that obtain the highest percentages both in news consumption and in the positive evaluation of news coverage, linked to credibility and trust towards the media (Casero-Ripollés, 2020: 10). The visual representation of the virus spread by these TV news, especially in the form of a virion, seems to be an important element of the imaginary of the COVID-19.

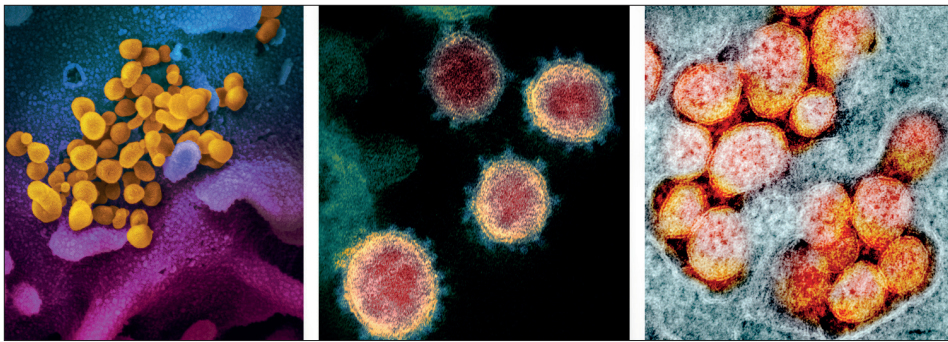
The communication of the Ebola epidemic in 2014 represents a landmark regarding the use of visuals, as different colorized versions of an electronic microscope image of the Ebola virion in television newscasts information screens was widespread, and “overwhelmingly used as a decorative design element, lacking context, in digital communication events throughout the outbreak of 2014”

(Fausset, 2018: 101). Some Spanish television newscasts, such as Antena 3 Noticias YouTube channel (Antena 3, 2014), also used this image of the Ebola virion.

Meanwhile, the external morphology of the SARS-Cov-2 virion features an envelope with spikes, which serve as “hooks” in order for the virion to grab the cells. This virion belongs to the family of *Coronaviridae viruses*, a name associated to the resemblance of their spikes to the solar corona. SARS-Cov-2’s spikes are smaller than those of other coronaviruses related to pandemics, as the SARS virion (Burrell, Howard, and Murphy, 2017; Gorbalenya, Baker, and Baric, 2020).

The National Institute of Allergy and Infectious Diseases (NIAID), and its Rocky Mountain Laboratories (RML), in the US, took photomicrographs of the SARS-CoV-2, which were distributed in January, 2020. RML investigator Emmie de Wit, isolated the virion, and microscopist Elizabeth Fischer produced the images. The Visual Medical Arts office at the RML digitally colorized these images (Figure 1).

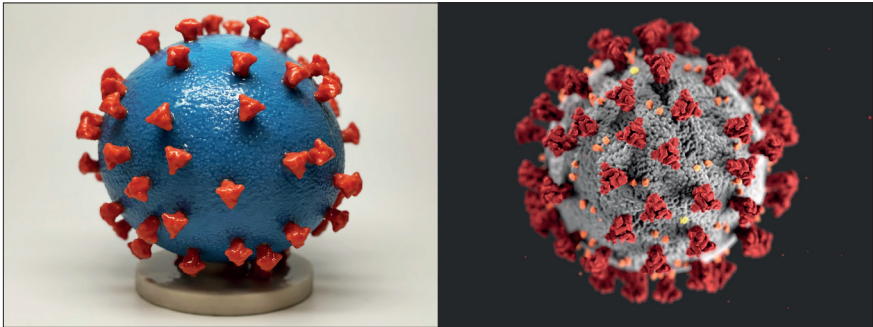
**Figure 1. Photomicrographs of the SARS-CoV-2**



Source: NIAID (2020a).

Moreover, in February, 18, 2020, the NIAID published 3D images of a virion model (NIAID, 2020b), coincident to the most successful scientific illustration of the SARS-CoV-2 virion, designed by Alissa Eckert and Dan Higgins, at the Centers for Disease Control and Prevention (CDC, 2020). “As the pandemic spread and intensified, their rendering’s reach did, too”, explain Giaimo (2020). As Figure 2 shows, when comparing these works with the microscopic photographs, we can see that both NIAID researchers and CDC illustrators highlighted the virion spikes in their work.

Figure 2. The most successful 3d illustration of SARS-CoV-2 virion



Source: NIAID (2020b) and CDC (2020).

METHODOLOGY

The analysis of the imaginary of the COVID-19 used by the news programs has been carried out on a random sample of 83 news programs from RTVE 1, RTVE 24H, Antena 3, La Sexta and Cuatro, broadcasted between January 15 and April 15, 2020. For the analysis, we developed a process of viewing and describing the most recurrent supporting images in the treatment of COVID-19.

At the same time, a second sample with 121 images and illustrations of virions representing the infectious agent in COVID-19 has been randomly extracted from the 83 television news. Tables 1 and 2 show the percentage of images collected according to the TV channel and the month of issue.

Table 1. TV channel of broadcast of the news of the sample

TV channel	
RTVE 1	34
RTVE 24H	10
La Sexta	22
Cuatro	24
Antena 3	31
Total	121

Source: Own elaboration.

**Table 2. Month of broadcast of the news of the sample**

Month	
01/2020	11
02/2020	22
03/2020	52
04/2020	36
Total	121

Source: Own elaboration.

The complete sampling sheet for each of the virion images includes the following categories and options:

Issue date [January, February, March, April]; TV channel [RTVE 1, RTVE 24H, La Sexta, Cuatro, Antena 3]; Type [Illustration, Microscope, Drawing]; Macro [Very large, Large, Medium, Small]; Surface [Organic, Rough, Smooth, No surface]; Color [Gray, Blue, Light Blue, Green, Emerald, Violet, Fuchsia, Orange, Red, Yellow]; Spike [Very long, Long, Short, Without peplomers]; Termination [Pointed, Medium, Flat, Tentacle, Rounded, Unfinished]; Movement [Static, Slow Movement, Fast Movement]; Interaction with other elements [Presenter, People, Others, No interaction].

In order to understand why the news programs have chosen the virus graphical representation they had, 10 telephone interviews were carried out. A total of 10 people working for the three main Spanish channels and communication groups: RTVE, Mediaset (Cuatro) and Atresmedia (Antena 3, La Sexta) have been selected randomly using professional social networks.

These professionals were selected based on four criteria: Responsible for TV channel design, news producers, TV journalist and corporate identity managers at television news from the relevant TV channels.

The interviews were carried out between April 14 and 22 and the survey was divided into three blocks. In the first block, we introduced some general aspects questions to determine who, how, and what the selection criteria were for the images used for decorating the set (presenter background) starting from the beginning of the crisis until April 15th. In a second block we performed a battery of opinion and evaluation questions to find out the purpose of the use of those images and the evolution of the use of pictures and graphism during the health crisis. And in the third and last block, questions were asked about how each of the professionals believes that the audience was perceiving the images.

Finally, as these interviewees suggested (Table 3), we searched four of the main suppliers of stock images (*Getty images*, *Shutterstock*, *123RF* and *Istock Photo*), using keywords such as “coronavirus”, “COVID-19” and the name of the different viruses during the last week of March and the first week of April.

**Table 3. Origin of the virion designs according to the professionals of the Spanish television channels**

	Professionals interviewed									
	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
Own design of the virion	X		X	X	X		X	X	X	X
From Stock imagery sites		X	X	X		X	X	X	X	
From WHO, EU and the Ministry of Health images		X	X	X		X	X	X		

Source: Own elaboration.

## RESULTS

### EVOLUTION OF THE COVID-19 IMAGINARY IN SPANISH TELEVISION NEWS

The analysis of the images used by the Spanish television news when covering COVID-19 shows a relevant evolution. Between January and April 2020, the epidemic that originally affected China only, became a worldwide health crisis with more than 20,000 deaths in Spain, hospitals overflowing in many cities and millions of people confined into their homes. Table 4 compares the evolution both in the images used in the TV news to report on COVID-19 and in the specific image used to represent the SARS-CoV-2 virus.

**Table 4. Evolution of the imaginary of the COVID-19 on Spanish television news**

Date	Acts/Facts	COVID-19 imaginary	SARS-CoV-2 imaginary
1 January - 15 February	On January 11, the first confirmed death. First cases in China, Thailand, Japan and South Korea.	People with masks in China; medical tests, temperature taking in China; disinfection of spaces in China. Biohazard sign; hospital with first infected cases; Aircraft with European citizens evacuated from China; Mobile World Congress and companies that cancelled their attendance	3D illustrations of coronavirus virions (H1N1, HCoV-NL63, HCoV-229E, HCoV-OC43, HKU1) and free representations
16 February - 29 February	Italy begins confinement; Mobile World Congress in Barcelona is cancelled	Health crisis in China; Mobile World Congress in Barcelona; empty squares and streets of Italy and police making road searches, Erasmus students in Italy, world map with cases of infection; biohazard sign; hotels with infected quarantined; hospital and nurses; charges of the Ministry of Health	Several versions of the 3D virion based on H1N1 and other coronavirus gain importance

Date	Acts/Facts	COVID-19 imaginary	SARS-CoV-2 imaginary
1 March - 15 March	Closure of schools, establishments and other spaces in Spain and start of lockdown	Streets of large deserted cities; schools and other closed buildings; health crisis in China; COVID-19 test, world map with cases of infection and deaths; hotels with infected quarantined; hospitals and nurses; charges of the Ministry of Health	3D representation of virion is diversified, new colors are used (green, pink or blue) and its being represented bigger than before
16 March - 31 March	State of alarm extended. Non-essential services prohibited	Overflowing hospitals; nursing homes; nurses; people with masks; COVID-19 test, laboratories; old people; supermarkets; world map with cases of infection and deaths; students using the computer; streets of large deserted cities; police checks; charges of the Ministry of Health and Government	Some 3D representations of the virion are in motion
1 April - 15 April	Extension of the alarm state of alarm for an additional 15 days	Balconies with people applauding; people with masks; supermarkets; hospitals; nurses; COVID-19 test; laboratories; students using the computer; world map with cases of infection; police checks; government politicians; children playing at home; streets of large deserted cities;	The use of 3D moving virion is widespread and in some cases scientific illustrations are used

Source: Own elaboration.

## THE REPRESENTATION OF THE SARS-CoV-2 VIRUS IN SPANISH TELEVISION NEWS

Analysis of the sample consisting of 121 images and illustrations of virions representing the COVID-19 infectious agent, demonstrates certain patterns and similarities, as shown in Table 5.

**Table 5. Type of virion shown in the Spanish television news**

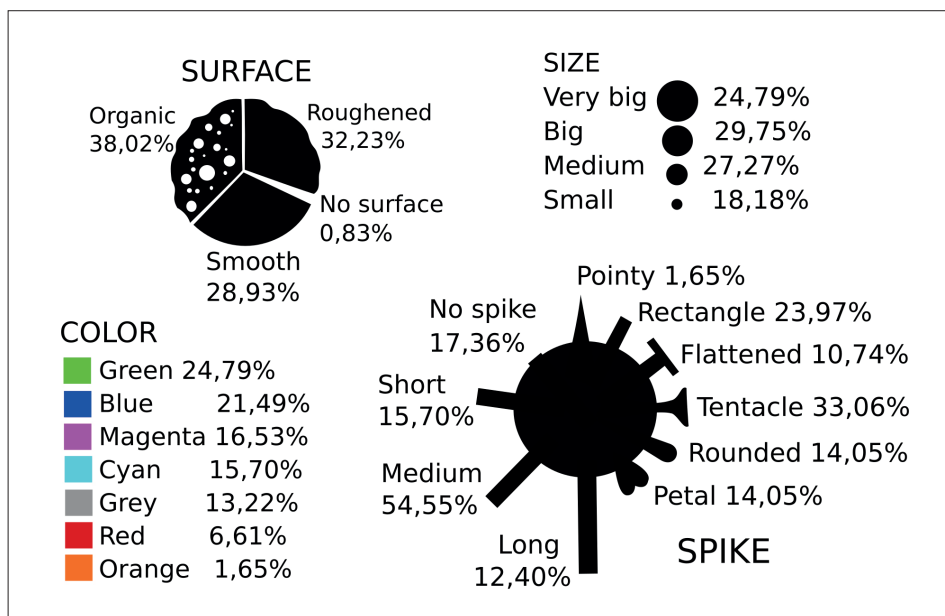
Type	Movement	Interaction
Illustration: 90,91%	Static: 90,08%	With TV reporter: 73,55%
Microscope: 8,26%	Slow: 5,79%	No interaction: 19,83%
Drawing: 0,83%	Fast: 4,13%	With other: 6,62%

Source: Own elaboration.

Regarding the morphological features of the virion (Figure 3), there is greater diversity among the images, but the large virion stands out with medium or long spikes.



**Figure 3. Morphological features of the virions in the Spanish television news analyzed**



Source: Own elaboration.

Therefore, the most common representation of virions on Spanish TV news has the following characteristics:

### ***Illustration Imitating the Microscopic Image of the SARS-CoV-2 Virion***

Most of the images analyzed (90.91%) are illustrations, as opposed to images obtained directly from an electron microscope (8,26%) —such as those broadcast by The National Institute of Allergy and Infectious Diseases (NIAID) and the Centers for Disease Control and Prevention (CDC)—. The drawings of the virion, usually drawn to explain the composition of the particle, have been used in a very specific way (0,83%).

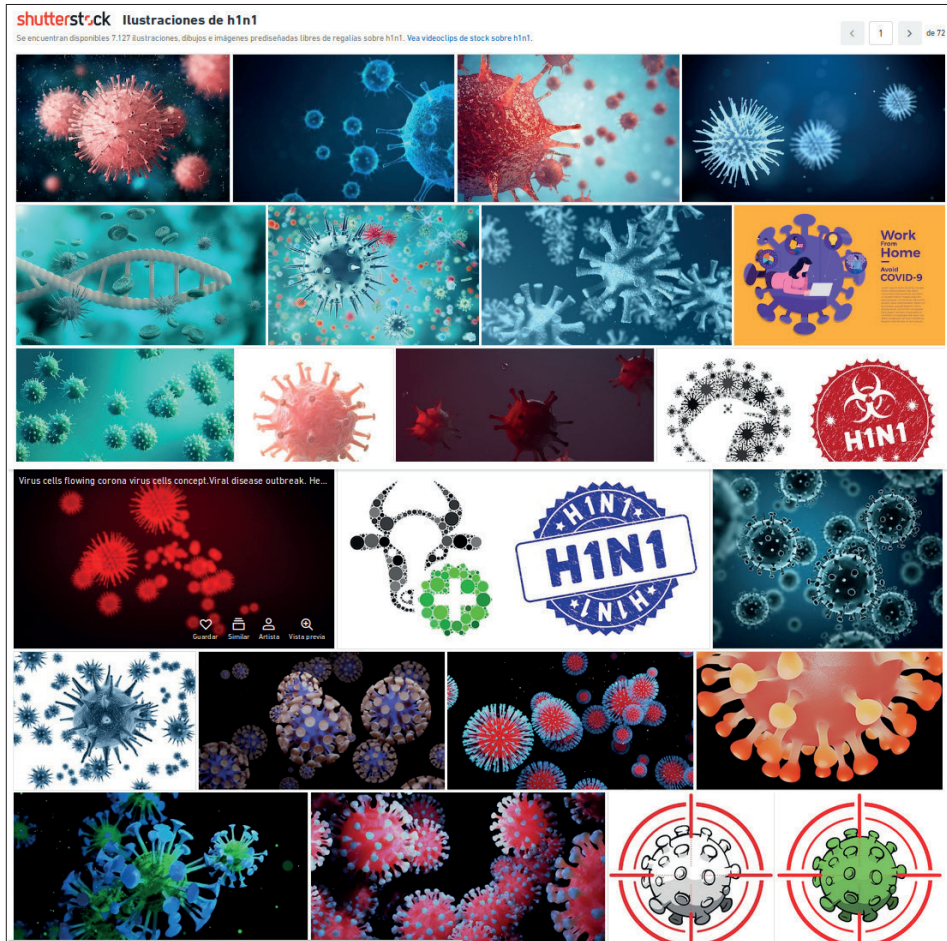
Although most of these illustrations partially mimic images obtained through the microscope, only 11.57% resemble the scientific illustrations of the SARS-CoV-2 virion, for example, the 3D model generated by NIAID in February 2020 (NIAID, 2020b) or the 3D illustration generated by Alissa Eckert and Dan Higgins, from the Centers for Disease Control and Prevention (CDC, 2020).

Supplier of stock images such as *Getty images*, *Shutterstock*, *123RF* or *Istock Photo*, a resource that journalists and designers of TV channels have claimed in interviews to use (Table 3), include the scientific illustrations, but also images that correspond to other types of virus or free interpretation. In fact, many of the illustrations analyzed in the Spanish television news are more similar to those designed for the influenza A virus. As can be seen in Figure 4, the most



frequent virus in TV news is the one offered by commercial image repositories when searching for coronavirus or even Influenza A or H1N1.

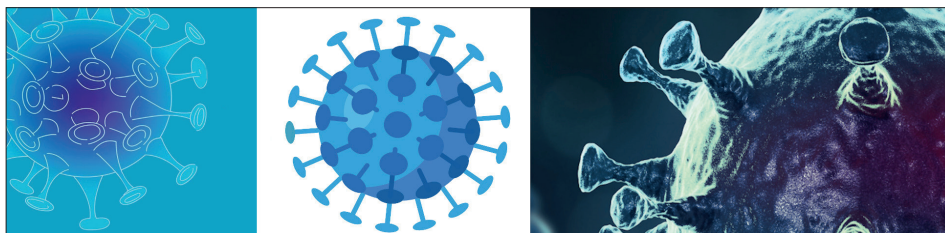
**Figure 4. Resulting images in Shutterstock when searching for the H1N1 virus**



Source: Shutterstock web site (April 10, 2020).

Another of the sources most frequently cited by television channel professionals (Table 3) are the images that institutions such as the WHO, the EU and the Spanish Ministry of Health have broadcast during the first weeks of the health crisis. As Figure 5 shows, these images also do not correspond to the academic illustrations.

**Figure 5. Most common images of virion released by WHO (left), EU (center) and Spanish Ministry of Health (right)**



Source: WHO (2020), European Commission (2020), Ministerio de Sanidad (2020b).

*Three-Dimensional Object.* Many of the virions that appear in the news have been designed with a software tool for 3D images and normally show a perfectly spherical shape, despite the fact that the SARS-CoV-2 virion images obtained from the microscope have an irregular oval shape. In some of the images in news broadcasted in April, the virions appear in motion, an effect that enhances the three-dimensionality of the bodies.

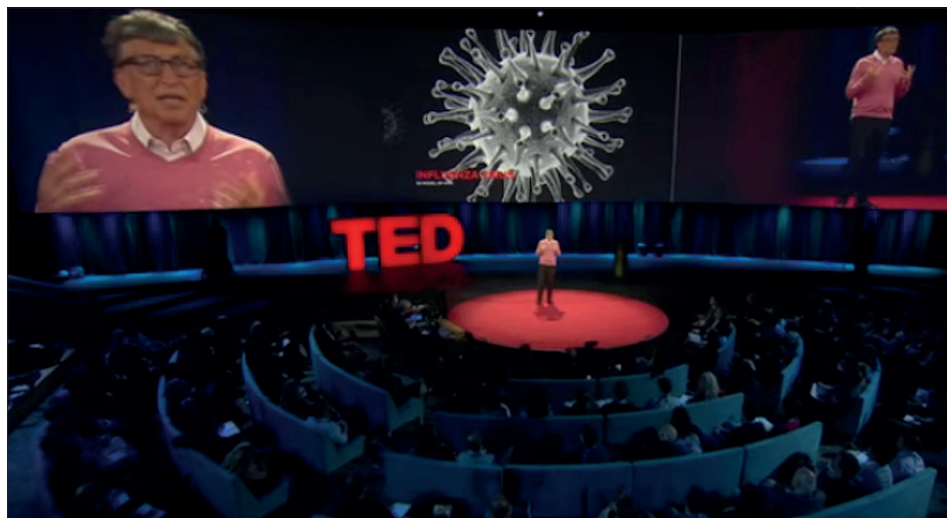
*Organic surface.* The surface surrounding the virion is mostly rough or organic (70%), a feature that enhances not only the embodiment of the particle but also the appearance of the microscopic image. In 28,93% of the cases its aspect is plasticized, as it usually happens for example in the news of the 24 hours RTVE channel.

*Large size.* 29.75% of the analyzed images are large and 24.79% are very large, therefore there is a relative predominance of macro images in the virions. In general, the most common setting includes one or two large particles surrounded by a few smaller ones.

*Corporate color.* The virion is represented in different colors, but blue and light blue stand out with 37.1%, green with 24.7% and magenta with 16.53%. The chromatic palette corresponds to that of the TV channel's own corporate image (especially RTVE 24h, RTVE 1 and La Sexta), as the interviewed professionals admitted.

*Elongated and tentacular spikes.* In 70% of the virions analyzed, elongated or very elongated spikes stand out, which do not correspond so much to the images of the SARS-CoV-2 virus but to the illustrations generated by public authorities (WHO, EU or Spanish Ministry of Health) and stock images websites as a result of the influenza A or swine flu crisis. Figure 6 shows one of the best known images of such viruses, used by Bill Gates in 2015 during a conference.

Figure 6. Picture of Bill Gates' Ted conference



Source: Gates (2015).

*Movement.* In the samples analyzed at the end of March and beginning of April, some virions (10%) are shown in slow motion along the screen of the set. Sometimes it is not only the virion that is moving as but also other particles around it.

*Interaction with other elements.* In most of the cases analyzed (73.55%), the virions interact visually with the presenters, while in 19,83% there is no interaction. The image of a large virion behind the presenter could contribute to represent the virus as a dangerous agent.

## ANALYSIS OF INTERVIEWS WITH PROFESSIONALS FROM TV CHANNELS

Interviews with journalists and designers from different Spanish television channels allowed us to understand the objectives behind the design of the virions analyzed in this work.

Thus, many of these professionals recognized that they mostly based the design of their virion images on the resources available in Internet and few of them had requested information to health professionals.

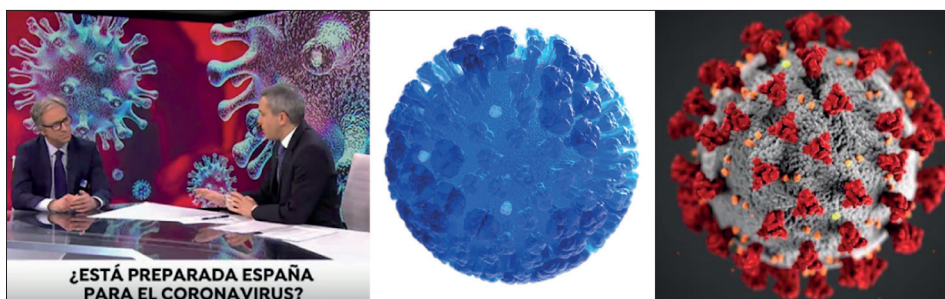
According to those interviews, one of the main sources of inspiration had been the commercial image repositories, which have been fed over the years with illustrations on the different types of coronavirus. Sergio Hontanilla, from La Sexta, indicates that in February, images of other virions, such as the influenza virion, were used in television information screens, because those were the images available in the image banks.

## DISCUSSION

Therefore, the invisible enemy is materialized from a computer-generated 3D illustration, imitating macroscopic perspective, to emphasize its corporeality, accentuated by the rough surface and elongated spikes.

Although the scientific illustrations of SARS-CoV-2 began to be broadcasted in early February, they were not used by TV stations until late March and early April. One of the causes of this could be the relative difficulty in finding images of the new coronavirus compared to the large number of images generated in previous health crises, for example, illustrations that correspond to influenza A. However, even these images do not resemble scientific illustrations, as can be seen in Figure 7.

**Figure 7. The most common type of virion in Spanish TV news (left), Influenza A virus scientific illustration (center) and SARS-CoV-2 scientific illustration (right)**



Source: Antena 3 News, CDC (2019) and CDC (2020).

These images may seem to elicit fear in the viewers, as they represent big virion entities, with threatening spikes, and rendering a deadly enemy visible. In this sense, several studies have addressed the advantages and disadvantages of using fear as a communication strategy in risk health communication. Nevertheless, the results are not conclusive (Paek, Oh, and Hove, 2016; Klemm, Hartmann, and Das, 2017).

All the interviewed professionals also agreed that the designs that their TV channels have produced try to explain to their audience the main characteristics of the virus. Perhaps that is precisely why this educational objective has ended up having more weight than fidelity to scientific images, and this is why they have even exaggerated some of its most characteristic attributes, like the long tentacles. In fact, the feature that could make virion most feared, the pointed spike, has only been used in 1.65% of the images analyzed.

The main limitation of this study has been the reduced availability of television graphic designers to cooperate with us due to their work overload during the pandemic crisis. Concerning this, future research may obtain deeper insights from the television department of design.



Also, the qualitative method adopted in this study may also be considered a limitation, as there is no standard taxonomy to categorize images, and other researchers may use other feature categories for a similar type of visuals.

As in other articles about communication in health crises or pandemics, the graphic resources try to communicate danger by explaining some of the toughest features of the virus, like its ability to penetrate new organisms and infect them.

However, other motivations could be important. Thus, experts reported that one of their main goals was to call the attention of the audience, as well as an aesthetic purpose. Both motivations are consistent with the testimony or the medical illustrator designers at the Centers for Disease Control and Prevention (CDC), Alissa Eckert, and her colleague Dan Higgins, who said that they designed a widespread is a close-up (“beauty shot”) image of the COVID-19 virion with the main purpose of grabbing the public’s attention (Gaiamo, 2020).

Secondly, the visual size and movement of the virion on television newscasts information screens, in many cases behind the news anchor or the participants in a television talk, may also suggest threat, which implicitly elicits fear as an adaptive emotional reaction. Though the experts from Spanish television channels that participated in this research did not identify threat as a conscious purpose of their design, one of them, Jesús Lozano, from Antena 3 Television, admitted that unconsciously it may elicit fear, especially because of the size of the virion.

Visuals are an important aspect of health risk communication in television newscasts. They may help not only to illustrate the content delivered in the news, but also to raise awareness of the risk, and even to influence the population response to a pandemic depending on the highlighted features of the images. The imagery of the virions analyzed in this study may help to understand this fact. Nevertheless, future research may extend the comprehension of this phenomenon to other kind of images, and to their implications in pandemic communication by the media.

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