Towards a model of narrative in immersive journalism

Hacia un modelo de narrativa en periodismo inmersivo

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ABSTRACT
Introduction: Given the increase in use of virtual reality and immersive content as a reporting format by journalists and the media, we have proposed a possible virtual reality narrative model for the production of these types of content. **Method:** We have opted for a mixed study, where the quantitative is made up of surveys conducted with 60 Generation Z Spaniards, at the same time as two discussion groups, with 5-6 individuals of a similar age. Likewise, a comparative analysis is considered between elements of the immersive narrative and the traditional audiovisual narrative in order to reach the desired end result. **Results and conclusions:** The complexity of the segmentation of audiences in the digital field is evident, despite the individuals belonging to the same social environment. The instruments of measurement allow for some basic elements for the creation of news content in multimedia formats with immersive capacity, which should be accompanied by commitment and perseverance by the media experts and journalists involved in the innovation processes.

KEYWORDS: immersive journalism; narrative model; production; virtual reality; Generation Z; Spain.

RESUMEN
Introducción: Ante el incremento de uso por parte de periodistas y medios de comunicación, de la realidad virtual y los contenidos inmersivos como formato para informar, nos hemos propuesto aportar un posible modelo de narrativa de realidad virtual para la producción de estos contenidos. **Metodología:** Se ha optado por un estudio mixto, donde lo cuantitativo está compuesto por encuestas realizadas a 60 individuos *Generación Z* españoles, al tiempo que dos grupos de discusión con 5-6 individuos de similar grupo etario. Asimismo, se consideró un análisis comparativo entre elementos

de la narrativa inmersiva y la narrativa audiovisual tradicional, para alcanzar el fin deseado. **Resultados y conclusiones:** se evidencia la complejidad de la segmentación de audiencias en el ámbito digital, aunque los individuos pertenezcan al mismo entorno social. Los instrumentos de medición permitieron disponer de algunos elementos básicos para la creación de contenidos noticiosos en formatos multimedia con capacidad inmersiva, los cuales deben ir acompañados de un compromiso y constancia por parte de los medios de comunicación y periodistas implicados en procesos de innovación.

PALABRAS CLAVE: periodismo inmersivo; modelo narrativo; producción; realidad virtual; Generación Z; España.

CONTENTS

1. Introduction

The expansion of the internet to all corners of the world and the articulation of its languages and their increasingly perfected and established rules of the game, as well as the overlap of the binary language and its algorithms in human pursuits and in its genesis in the context of the so-called Fourth Industrial Revolution (Schwab, 2016) are generating an abrupt and profound change in a globalised society.

This context, in relation to the referenced, has a direct impact on all areas of knowledge, and this includes that of communication and, specifically, that of journalism – which is our field of research in the present study.

Such is the case that content and news consumption habits are determined, practically in totality, by mobile technologies. This has generated the need to create and develop new content and new narratives to respond to the multiple platforms of the digital context and that has led us to said forms of consumption, giving us the possibility to develop new alternatives for informing audiences and covering events.

In this sense, due to the emergent character and permanent transformation of the digital sphere, the only possible dynamic is that of experimentation, where all the actors involved, as well as the new ones as required in a specific context, are developing multiple and very diverse proposals without a common line of work in the creation of new content and in the way of narrating them within the possibilities of language and digital technologies.

Thus, multimedia formats with immersive capacity and virtual reality are shown to be clear interactive news alternatives, which aim for the audience to be more involved with what it sees, making it possible to increase their level of empathy, given the position of first person in front of the content.

But, as we have indicated, the experimentation that still prevails in this aspect –despite the fact that the format arose all the way back in 2014– requires a standard form and narrative regulations defined for the creation of content that aim for acceptance and interaction by the audience, in relation to the their continuity, in their ways of reading, watching, observing and understanding the reality that surrounds them.

The experiments carried out by Hendriks *et al.* (2019) and Shin and Biocca (2018) determined that this technology and its derived formats help the audience to understand and get involved with issues to which they are exposed.

That is why, based on the experience and opinions of some Spanish users belonging to Generation Z (Turner, 2015) – the next and immediate generation of consumption –, this research focuses on defining some basic narrative criteria in the coverage of news, based on multimedia formats in 360º, with immersive capacity.

We have the technology to generate immersive journalistic narrative models in 360º, but there is no narrative model agreed upon by the experts for multimedia formats as exists in the traditional audiovisual narrative of television and cinema, for instance. There are many proposals, but they are not regulated, systematised or standardised, despite continued efforts, negatively affecting the development of format and the establishment of consumer habits.

2. Theoretical framework and the current status of research

The so-called Fourth Industrial Revolution has arrived, we are part of it. A process defined by Schwab (2016) as a confluence, in fast and deep transformation, of a society highly interconnected through mobile technologies, the development of nano and biotechnology, the indisputable advance of artificial intelligence (AI), as well as the consolidation of the internet of things (IoT), among other processes, mostly or fully linked to the technological field.

This scenario favours the development of omnipresence in the news, thanks to 5G connections and safer networks through blockchain systems (Salaverría, 2018).

A context within which there is a clear change in the pattern with which society faces various challenges, deals with news and builds different levels of relationships. In this regard, Calvo (2018) states that, as a result of digitalisation, we are witnessing a new conditioning of both interpersonal and collective relationships.

Different areas of human life are impacted by this situation and are constantly evolving as a result. Communications and, specifically, journalism are areas that have a strong and strict conditioning within this process.

This digitalisation and these rapid technological advancements have redefined some aspects of journalism, allowing for the creation of new roles, such as: director of audience engagement, news reporter on social networks, producer of videos at Snapchat (Glickhouse, 2018).

Thus, the internet and its diverse digital possibilities evidently hold command over communication in the face of traditional media. Social networks have taken Toffler's 'prosumer principle' (1980) to a new level: the public has abandoned its passivity, becoming a participant in the news process. And it seems that McLuhan's phrase 'the medium is the message' is replaced with Cardoso's 'people are the message' (2014).

Calvo (2018) and Noguera (2018) both warn us, stating that social networks in particular allow people to enjoy a prominent role in collective communication – and even more frequently, ephemeral – which underpins Castells' argument (2010) related to 'mass self-communication'.

This audience, with special emphasis on the so-called Generation Y (Millennials) and Generation Z[1] (Turner, 2015), increasingly demands multimedia content that provides higher levels of interactivity. It is worth noting that, in part, this is a consequence of the circulation of mobile technologies, and especially of our constant interaction with smartphones (Kakihara, 2003, Sørensen, 2003).

In contrast, for Feixa, Fernández-Planells and Figueras-Maz (2016), these hyper-digital and interconnected generations are considered Generation @ and Generation #. The first because it responds to the introduction and development of the internet, and the second, to that collaborative network culture. In summary, it corresponds to the same process described.

Therefore, mobility is considered to be a new news paradigm, as are societies, which are recognised today as nomadic or mobile (Giddens, 1999, Hjelm, 2000, Urry, 2000).

Thus, the generation's demand for new content is growing, as a response to new ways of consuming and publishing said content. We see how various additions to words like emoji, stickers and GIFs come up. Additionally, new aesthetic ways in the audiovisual field, marked by the temporality imposed by Snapchat and Instagram stories are taking shape.

But, as we have already indicated, audiences are increasingly segmented, and with this diversity and the demand for certain formats, augmented reality, mixed reality, virtual reality and videos and photographs in 180º and 360º become audiovisual alternatives with immersive capacity.

In regard to the latter three, it is worth noting that this is a phenomenon and that different consultants and surveyors indicate that its evolution will peak between 2020–2023, at which time it will be considered a technology commonly used by most of us (Deloitte http://bit.ly/2eXhZX6, Statista http://bit.ly/2iaS5Tw and Business Insider http://bit.ly/2Bh5f5z).

2.1. Virtual reality and multimedia content with immersive capacity

When we refer to these terms, due to the fact that they are new and therefore in the process of being properly defined and conceptualised (a process carried out as they materialise and are consumed), various authors and reporters in the field do not differentiate clearly enough between them, demonstrating and defining them as one and the same, when, in reality, certain technical determinations mark differential classification.

Therefore, we will define virtual reality as that interactive and immersive experience through which the user gets the sensation of being in a certain place, through the use of a device with a screen located in the bezel (above the screen), with access to a digital interface that allows for reaching emotional and even physical sensations similar to those of real life (Ryan cited in Vásquez and López, 2017, Sidorenko, Cantero and Herranz, 2017).

In the words of Slater (2009), it is the illusion that something is really happening.

[1] Today, 'Generation Z' represents the largest segment of audiovisual consumption on the internet, as was already clear in 2016, by the figures published by the YouTube platform itself, which placed this audience at 81.9% of its users in the United States (see http://bit.ly/2AxzTcO). As Turner (2015) correctly indicates, we refer to the generation that was born with the internet, that does not know and does not conceive the world without the current interconnection and, therefore, is considered digitally native or net-gen.
Based on this stratification, it is also advisable to review the works and studies carried out by the YouTube platform itself (http://bit.ly/2AxzTcO) or by the Fundación Telefónica (https://www.youtube.com/watch?v= YHSvkWseOdY).

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The technologically purist (De la Peña, 2010, Pavlik, 2001, Pryor, 2000) establish that true virtual reality and true immersion correspond to experiences involving gadgets that allow not only for free will in the viewing experience, but also for interaction by our limbs. We are talking about cases such as the Oculus Rift, Oculus Quest, HTC Vive (all models) and Lenovo Mirage, which include elements that involve the movement of our hands.

This experience has been given the technical denomination of 6DoF (six degrees of freedom), referring to the six degrees of freedom that are achieved – currently – through these devices.

However, despite the fact that this technology and the development of the formats were very much resumed in 2014, mainly thanks Google and Facebook as could be expected, to this day there is still no consensus on various concepts derived from this process.

On the one hand, we must establish that immersion – the basic principle of this technology – is the possibility for the user to reach the sensation of being in the represented place, rather than in the actual physical space where he or she really is (Mütterlein, 2018; Vives and Slater, 2005).

Also, according to the characteristics of the content, Sidorenko *et al.* (2017) establish an important differentiation. In their opinion, there is, on the one hand, Virtual-Virtual Reality (RV2), composed of the contents produced through special 3D design software and platforms such as Unity and Unreal; and, on the other hand, Real Virtual Reality (RVR), which refers to content with immersive capacity obtained from real experiences, through special recording equipment, such as Samsung Gear, Insta360 nano or air and Xiaomi Mijia Mi Sphere, to mention but a few examples.

2.2. Journalism, virtual reality and multimedia formats with immersive capacity

The overlap of journalism and the technologies that allow the audience to enter into a virtually recreated scenario representing the story is called ‘immersive journalism’ (De la Peña, 2010, Dominguez, 2010).

Although initially it was a concept that described the possibility for the audience to have greater involvement with the information consumed, as well as to establish a greater level of empathy, its most recent definition refers to the idea of developing news content in a format with immersive capacity, in order to be consumed by virtual reality viewers (Cantero *et al.,* 2018).

This most recent definition is not radically different to the initial consideration, when Kishore (cited in Shin and Biocca, 2018) states that the meeting of the journalistic and technological industries through virtual reality has allowed for improving the user's experience with the news, because the greater immersion, the greater the user’s involvement.

In short, it is a narrative proposal that aims to increase the audience immersion, aiming at interaction, with which the interface, the quality of the content and the story must be closely related, with the main goal of positioning the user as the first person with respect to what he is viewing (Domínguez, 2010).

Immersion in journalism is achieved when the user has the opportunity to interact with the news, with the elements of its narrative or data. With this, instead of reading, the audience becomes involved with the content and is able to reach a greater understanding of the subject at hand (Steve Outing cited by Pérez-Seijó, 2016, p. 404).

And this is what journalism is made of – stories – and, therefore, the immersive proposal as well as other forms of journalism, deals with narrative, where data and news constitute a story (Pontes and Silva, 2010). In short, journalism is a narrative, a story made up of events corresponding to a temporary action that stimulates the imagination (Motta, 2005).

Hence, we emphasise that journalism articulated through this new technology focuses on increased audience participation with respect to the proposed content, a condition that has already been demonstrated in exploratory studies such as Wytt. *et al.* (2016). Therefore, Ahn and Shin (cited in Shin and Biocca, 2018) argue that empathy, as well as personification or positioning in the first person, are intrinsic concepts of virtual reality due to its requirement to build a story (storytelling).

At some point, Manfredi (2004) highlighted the importance of public media, especially TV, in its role as educator for the public. This format allows us to return to the role that defines a media expert/journalist as paternalistic, ignoring values and reinforcing the profile of the member of public, given its important empathising and sensitising role.

In short, we witnessed the breaking of the fourth wall represented on the device screen, which, prior to this audiovisual alternative, acted as a separator between the audience and the news story (Pérez-Seijó *et al.,* 2018, Longui, 2016, Domínguez, 2013).

For the associate editor of video and co-director of virtual reality of The New York Times, Marcelle Hopkins (2017), immersive journalism is currently the only type of journalism that allows us to take the audience to places that are not conventionally accessible, or with the economic and time restraints that most of us are bound by, while making them comfortable enough to achieve physical experiences similar to those of real life, and doing so for all audience members simultaneously.

The final pretence, as Paíno *et al.* (2016) and De la Peña (2010) point out, is to have the user represented in a digital avatar that penetrates the virtual scenario of the news story.

It is the opinion of Domínguez (2013), that the 360º images with immersive capacity do not allow us to reach a full immersive connection between the audience and the content as videos with similar characteristics do, as the screen acts as a fourth wall, differentiating between the physical world and the one represented in the story in question. Aspects such as audio are also essential for achieving abstraction between the two planes in question.

For the best global cases in the development of platforms, narrative proposals and content production focused on the immersive possibility, we look at: *The New York Times*, *The Washington Post*, *USA Today*, ABC News, Euronews, BBC, *The Guardian*, CNN, DW, *El País* and RTVE.

We are now at a place where every new digital product is increasingly distanced from a mere adaptation of the printed version, which means that journalists have more freedom to shape, change and improve their products and, above all, innovate. Thus, we can see an improvement in the diversity of narratives and journalistic techniques (Manfredi and Artero, 2014).

The first newspaper to exploit virtual reality as a resource for formalising the current meaning of immersive journalism was *The Des Moines Re*gister (Group USA Today) in 2015 (http://bit.ly/2Sap2MK). With the title 'Harvest of Change', the case of the Dammann family farm demonstrated how the demographic and economic changes in the United States directly affect the agricultural families of Iowa.

Through a replica of this family's farm and with 3D design software, thanks to the 6DoF principle that Oculus Rift permits viewers, users can take a tour of the facility's premises, discovering different aspects of both the family's work and personal routines. There are different points of reference related to specific spaces within the location that, when interacting with them, refer the audience to experiences in RVR format, where the interaction is limited to viewing 360º vertically and horizontally.

With these types of content, the audience can 'be' in front of the journalist talking with family members about aspects inherent to the commercial dynamics of the town where this family lives, as well as observing more personal moments, such as Sunday Mass or accompanying the father and son on their tractor to plough the land.

There are no additional explanatory elements, such as texts or images, beyond an intermittent voice-over narration. There are only explanatory texts in the RV2 6DoF experience mode, where some points of reference complement what the audience sees, through equipment technical datasheets related to farm dynamics, statistics on the commercial movement of some agricultural products or brief descriptions of characteristic aspects from an environment like the one we have described.

It is, in short, an innovative proposal where the two aesthetics overlap in terms of immersive journalism, i.e. RV2 and RVR, which is intended to achieve greater audience involvement by providing greater interaction elements.

We should note that this virtual reality consumption equipment, such as HTC Vive, is very expensive because despite it already being more costly on its own than other types of viewers, it requires a computer with video features and superior data processing, meaning there are very few users who have it in their homes. However, these considerations would be part of another type of analysis that does not correspond to our study.

The next way to take solid steps forward in the use of immersive content for informing its audience was another American medium: *The New York Times*, in 2015. But its strategy and use of this technology was different.

As can be seen from Marcelle Hopkins' report on the medium itself (https://nyti.ms/2V3cvN5), it was in November 2015 when Marcelle promoted and publicised her first immersive documentary 'The Displaced' (about children displaced by war) and the mobile app 'NYT VR'. The New York Times distributed 1 million 'cardboard' type viewing devices to its subscribers. Since then, more than twenty documentaries have followed this format in order to generate greater rapprochement amongst audience members on sensitive and complex issues that the news of the world covers.

Having been well received, the 'The Daily 360' – the portal through which The New York Times has committed to publishing at least one daily video with immersive capacity, on various topics that allude to current events both North American and global – materialised.

After these first versions, as we have already mentioned, other proposals were consolidated in the same field, demonstrating an irregular use of this technology in relation to the type of media, the narratives and formats developed by it, as well as for the geographical area in which it operates, which has made it much more difficult to establish basic criteria for the production of news and journalism through these resources.

In the specific case of Spain, although many communication mediums have been persuaded by including this technological resource in the news coverage – some driven by the sensation of 'novelty' and/or 'trend', as well as others by the need to include innovative elements in their offer – the truth is that few continue to use this technology in a consistent way for the production of content.

Of approximately 23 we can identify a priori: Agencia EFE, Antena 3 Noticias, *El Español*, MARCA, El Confidencial, AS, Canal de Extremadura, *Diario de Navarra*, SUR, *Diario de Sevilla*, 8 Zamora, TV3, *El Diario Montañés*, Televisió of the Balearic Islands, *Faro de Vigo*, CRTVG, Radio Television of Castilla y León, *La Vanguardia*, RTVE, *El País*, *El Diario Conquense*, *El Deporte Conquense*, Castilla-La Mancha Media. The latter five on this list still maintain this type of production, making up an official component of their news offering.

3. Objectives and hypotheses

Starting with the fact that virtual reality and immersive multimedia formats generate greater interest amongst and connection with audiences, in relation to certain themes, as can be seen from experiments such as Shin and Biocca (2018) or Steed *et al.* (2018), the main aim of this study is therefore to contribute to an approximation of a standard narrative model or proposal for the creation of multimedia content with immersive capacity in the field of journalism.

For this reason, in order to progress in the above-mentioned, we must provide the scientific, academic and professional community with a sample of experiences and tastes of consumption of young audiences (Generation Z – according to the concept and argument of Turner, 2015) in Spain, who are beginning to be the consumers of this type of content, and in the near future will form the bulk of the audience for these and other formats derived from digital development.

From this, we consider the following hypotheses:

H1. Despite initiatives carried out by some communication mediums and the studies that are beginning to be developed from the academic field, there is no standard for the construction of a narrative for immersive journalistic content.

H2. Based on the experiential testimonies of the 60 young people surveyed, aspects of the habit of digital consumption of this segment can be determined, which may provide clues for developing more successful and more engaging content of an immersive character.

H3. Based on the results obtained in the surveys, as well as through the discussion groups, new habits or audiovisual consumption scenarios may arise that have not been considered by the producers of news and information content in a 360º format with immersive capacity.

H4 And as a result of this study, we approach or make an attempt to establish the bases of an immersive and virtual reality narrative model focused on journalism.

4. Method

In order to try to meet the objectives of the research, as well as to solve the hypotheses, we decided to conduct a mixed study, where the quantitative element consists of surveys of eleven questions, put to 60 Generation Z Journalism students (Turner, 2015) from Madrid and Castilla-La Mancha.

The size of the sample is in line with studies related to the same technology and similar narrative style (Aardena *et al.,* 2010, Aitamurto, 2018, Hendriks *et al.,* 2019, Jones, 2017, Matsangidou *et al.,* 2019 and Steed *et al.,* 2018).

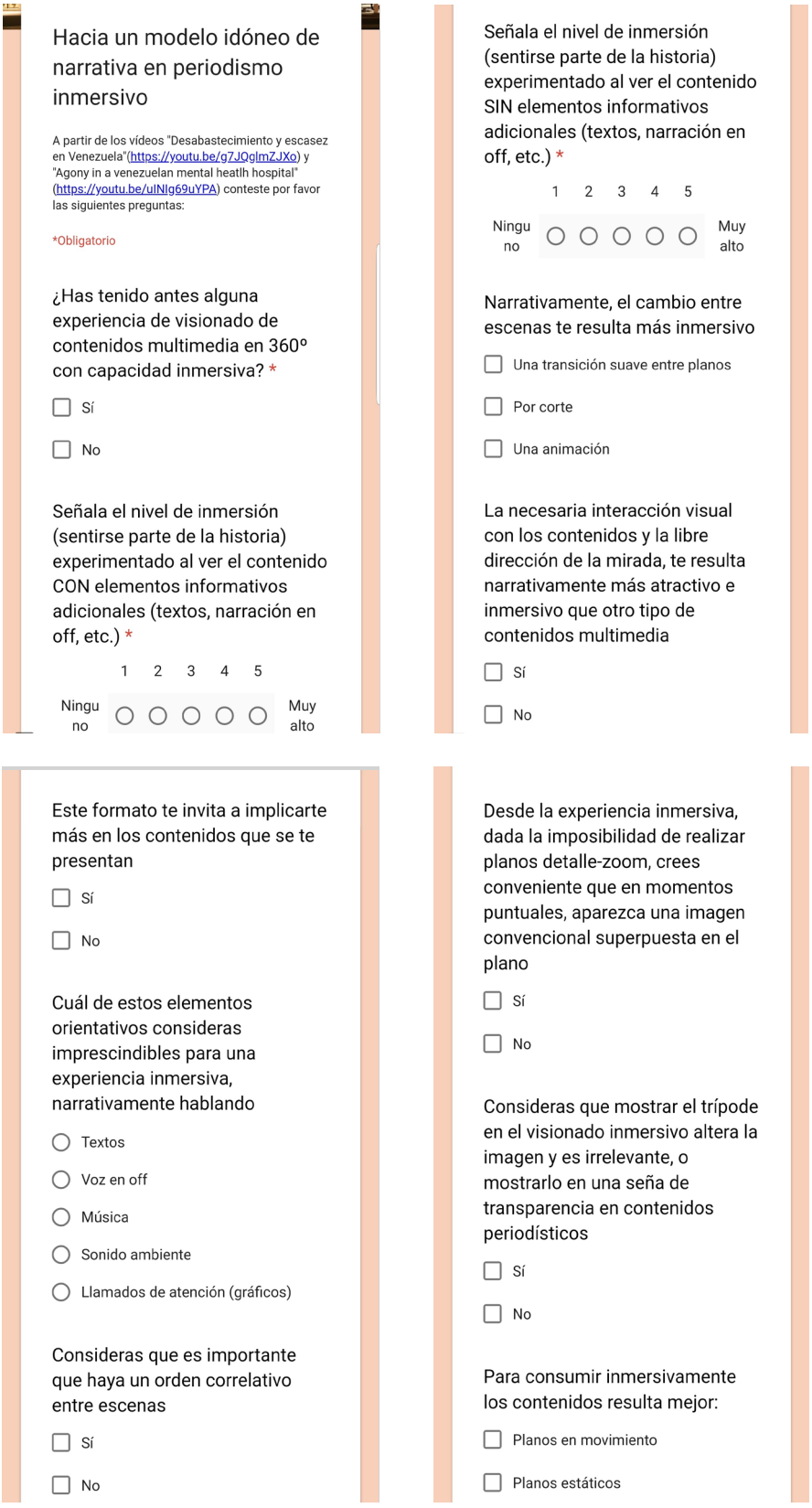
The apparent bias of those involved in the sample corresponds to merely practical elements for the purposes of the development of experimentation (we reference the study by Casero-Ripollés, Izquierdo-Castillo and Doménech-Fabregal, 2016) and because we were interested in understanding the observations of students who are just beginning their studies and who do not yet have professional criteria to comment on this type of content, thus having the same amateur status as that of any ordinary viewer.

In the future, it will be interesting to compare these observations with the criteria that they have accumulated upon completing their journalism studies. And, although others involved have completed more years of study, as indicated by Feixa, Fernández-Planells and Figueras-Maz (2016), hyper-digitalisation and interconnection in relation to young people is, nowadays, held in higher regard than any professional conception.

Of the videos considered for this instrument of measurement, which specifically relate to the humanitarian crisis in Venezuela, one is made by an NGO without any production criteria and in a clearly amateur way; and the other, in contrast, is produced by a recognised international communication medium, where various elements of interaction are incorporated in order to expand the provided information.

This theme was considered to be a topic with enormous potential for generating audience engagement, because it is a current problem and is widely covered by international media. For this same reason, there is immersive content of different qualities and production criteria, which offered, for the purposes of this research, the necessary resources for gathering the desired data.

The visualisation of content by the participating users was carried out through generic virtual reality viewers for mobile devices; that is to say, the participants used their own smartphones in order to carry out the activity.



Images 1, 2, 3 and 4: survey model on the viewing of two pieces of content with immersive capacity, available on *YouTube*.
Source: Google Forms.

In order to dig deeper into the results of some of the questionnaire's responses, two discussion groups with an exploratory approach were carried out (Calder, 1977), composed of five or six individuals of similar demographic information used by other measurement tools.

These participants, similar to those of the survey, were also journalism students at the Castilla-La Mancha (Cuenca) and Francisco de Vitoria (Madrid) universities.

Two groups of students – one from each university – was created. The participants had the opportunity to watch the two videos, both in an immersive capacity and individually. Once everyone had consumed both, they were gathered in a room to begin the discussions.

The activity was supervised and mediated by the researchers at all times. One of the researchers headed up the group discussion session.

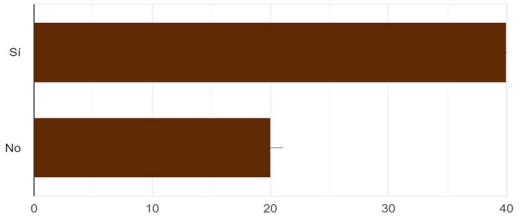
The experiment carried out by Casero-Ripollés, Izquierdo-Castillo and Doménech-Fabregal (2016) and Jones (2017) was used as a reference for this activity. We consider this technique to be the most appropriate for allowing us to have an exploration method that enables participants to express their concerns or opinions within a context (Zeller and Carmines, 1980), which is useful for the purposes of the present study. The questions asked in this exercise were:

- When we consume content with virtual reality viewers, are additional elements such as texts or graphics annoying, or do they contribute to a better understanding of what is displayed?
- Are these elements more convenient in the semi-immersive format?
- Do you consider that the voice-over is an element that helps to guide us through the content, or, on the contrary, does it interfere with the experience?
- If the tripod is removed as many have pointed out, is the content considered to have been undermined, as it has been edited?
- In the immersive viewing mode, that is, by using VR viewers, do camera movements generate dizziness or,
- On the contrary, are they not unpleasant for the experience?

Likewise, a comparative analysis between the obtained results was taken into consideration, as well as a comparative analysis between the immersive narrative and the traditional audiovisual narrative, with the purpose of trying to reach a standard narrative model in virtual or audiovisual reality of immersive capacity.

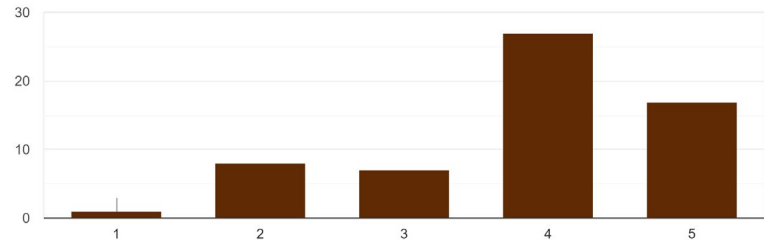
5. Results

From the survey carried out with 60 Generation Z individuals (Turner, 2015) of the autonomous communities of Madrid and Castilla-La Mancha (Spain), we obtained the following data:



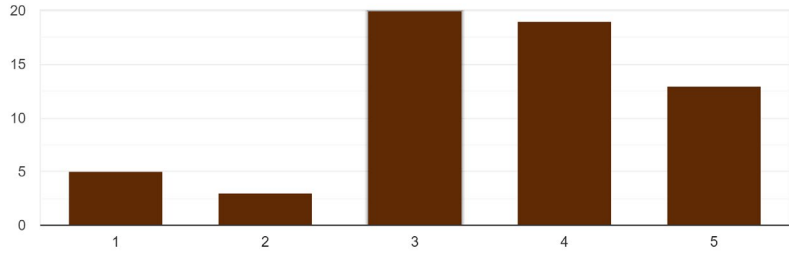
Graph 1: Have you had any prior experience viewing multimedia content in 360º with immersive capacity?
Source: Google Forms from survey conducted.

Of those surveyed, 66.7% stated that they had previous experience with this technology, an important piece of data to establish a benchmark in terms of demand and preferences regarding this type of content, as novelty and surprise could condition the responses to be less reliable in terms of results.



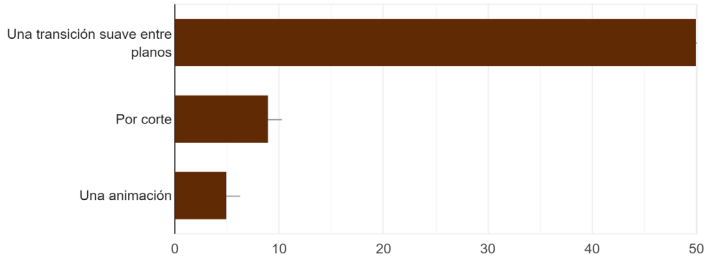
Graph 2: Indicates the level of immersion (feeling part of the story) experienced when viewing the content WITH additional informative elements (texts, off-narration, etc.).
Source: Google Forms from survey conducted.

In relation to content No. 2, the majority of the users indicated that the level of immersion reached was 'high' and 'very high', corresponding to the coverage made by *The New York Times* in a Venezuelan psychiatric hospital.



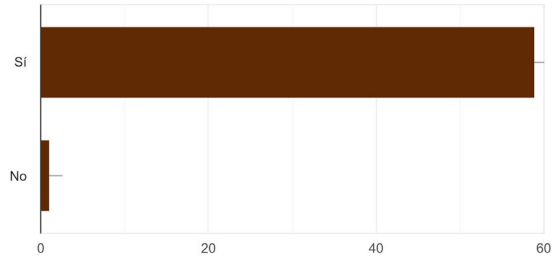
Graph 3: Indicates the level of immersion (feeling part of the story) experienced when viewing the content WITHOUT additional informational elements (texts, off-narration, etc.).
Source: Google Forms from survey conducted.

In relation to content No. 1, corresponding to the Venezuelan NGO Redes, users indicated that the level of immersion slightly decreased in the absence of additional information.



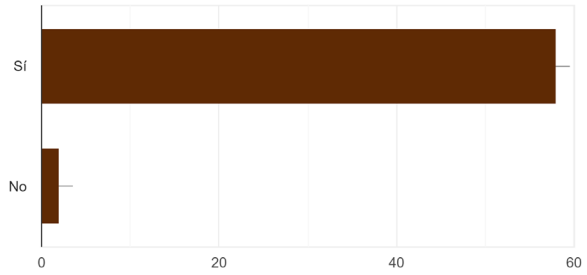
Graph 4: In terms of narrative, switching between scenes is more immersive.
Source: Google Forms from survey conducted.

Most considered that smooth transitions between scenes and planes were the best choice in immersive viewing mode.



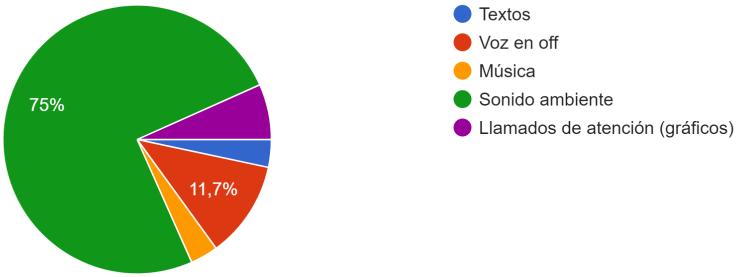
Graph 5: The essential visual interaction with content and being able to freely choose the direction of the gaze, is 'narratively' more attractive and immersive than other types of multimedia content.
Source: Google Forms from survey conducted.

98.3% of those surveyed stated that immersive content is more attractive than other types of multimedia content.



Graph 6: This format invites viewers to become more involved with the content presented.
Source: Google Forms from survey conducted.

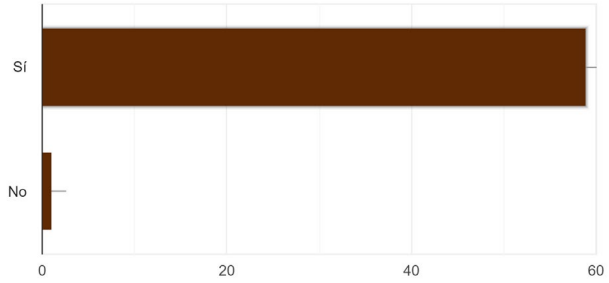
With regard to the concept of immersion, most (96.7%) believe that this format involves the user much more than the content.



Graph 7: Which of these guiding elements do you consider essential for an immersive experience, narratively speaking?
Source: Google Forms from survey conducted.

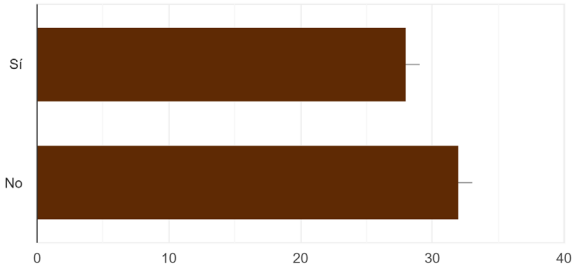
75% of those surveyed said that ambient sound, in other words, the original sound of the coverage is essential to achieve greater immersion with regard to the content presented. Similarly, much lower

than this figure, at 11.7%, is *voiceover* as the second most accepted resource for expanding the information shown.



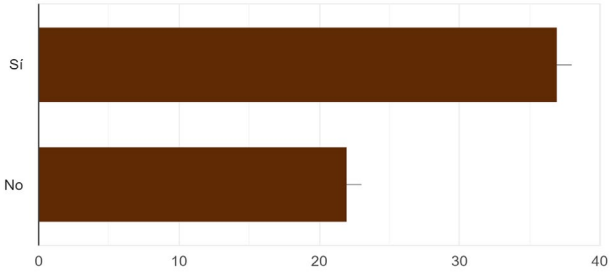
Graph 8: Do you think it is important that there is a correlative order between scenes?
Source: Google Forms from survey conducted.

Undoubtedly, the majority consider that there must be a coherent order in the succession of fields and scenes in immersive content.



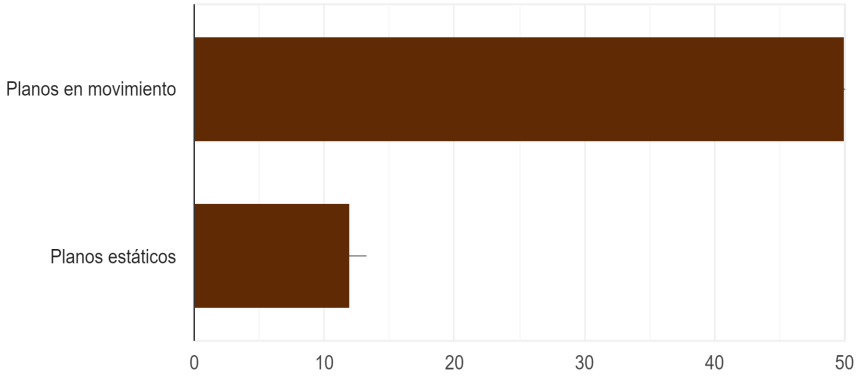
Graph 9: From the perspective of immersive experience, given the impossibility of doing detail-zoom plans, do you think it is advisable, at specific moments, for a conventional image to appear in the shot?
Source: Google Forms from survey conducted.

Although some media take into account the creation of journalistic pieces in this format, most of those surveyed in this research (53.3%) don't think it is advisable to use it as an informative element.



Graph 10: Do you think that showing the tripod in immersive viewing alters the image and is irrelevant, or is it a sign of transparency in journalistic content?
Source: Google Forms from survey conducted.

For most of those surveyed (62.7%), the tripod supporting the camera in 360º is a distortion element and annoying when it comes to immersively viewing the content.



Graph 11: Are moving or static shots better for absorbing content immersively?
Source: Google Forms from survey conducted.

83.3% preferred the aesthetics of video No.1 (NGO *Redes*), which was in constant motion, compared with the coverage by *The New York Times* in video No.2, composed of a series of static shots chosen freely on the part of the user, characteristic of the 360º immersive format.

As we mentioned previously, given that there were some responses which didn't allow us to definitively determine preference on some of the aspects that immersive journalistic content should demonstrate, two discussion groups were formed with the following results:

In response to the question *when we absorb content with VR glasses, are additional texts or graphics annoying, or do they contribute to a better understanding of what's shown?* Group 1 (UCLM students http://bit.ly/FGalumnosUCLM) stated that they help to understand what's shown and are another element of the content, even though at the beginning they were a nuisance. Group 2 (UFV students http://bit.ly/FGalumnosUFV) stated that the texts were in the way, because they demanded to be read by the user, which meant that less attention was paid to the content shown. It also depends on the intention of the video; in other words, it is preferable that written information appears at the beginning or the end of the content, avoiding superimposed images during the experience. The fact that they appear during the video can generate a backlash in the process of immersion by the user.

As to whether *these elements were more desirable in semi-immersive format,* Group 1 unanimously agreed that not, and that it was better to use them in the immersive visualisation mode. Nonetheless, Group 2 added that audiovisual text spoke for itself and text or informative elements should only be used when strictly necessary for the comprehension of what is shown, given that the comprehension of the text requires additional cognitive functions on the part of the user, which takes away from the audiovisual content.

With regard to if *they believed that voiceover was helpful in the transmission of the content or if, on the contract, it interfered with the experience*, Group 1 indicated that it couldn't be a constant element, because it impeded the original audio of the recording. Explicatory narrative should be intermittent and, in certain instances, alternate with some non-invasive texts. Under no circumstances should the voiceover narration allude to data or calls to attention in the content. For Group 2, it is

helpful provided that additional elements are added to what is seen. Ultimately, it should be alternated with the original audio of content, which ensures the sensation of immersion.

In response to the question *do you think that removing the tripod, as many have suggested, undermines the transparency of the content, because it is edited?* Group 1 believed that under no circumstances should there be any sight of the tripod, because it was annoying in the immersive viewing to have any indication of the camera for RVR content. Group 2 unanimously indicated that the tripod was unimportant, and therefore it wasn't important whether it could be seen or not.

Finally, when asked whether *in the immersive viewing mode, i.e. when using VR headsets, do the camera movements make you feel dizzy, or, on the other hand, do they not negatively affect the experience?* Group 1 unanimously answered that, although movement in the immersive videos can be uncomfortable at the beginning of the recording, it doesn't take long to get used to it. According to their criteria, this means of recording is preferable, because it more accurately creates a sense of realism. The theme is equally important, because the movement will always be less irritating when the story presented is very interesting to the audience. Group 2 considered that moving videos conveyed a greater sense of realism, although they could create some dizziness, and the ideal would be to alternate between moving shots and static shots.

6. Discussion and conclusions

One of the aspects which was favourable to our research was that the participants in our measuring instrument already had some knowledge of this technology, as shown in Graph 1, and we were also fortunate in terms of the group dynamics in the discussion.

Although there are few studies in the fields of communication and journalism on more immersive virtual reality narrative models, which create more engagement and empathy with the content presented for Generation Z, from the surveys carried out, we can conclude that this audience segment prefers that multimedia content with immersive capacity are produced:

- With smooth transitions between shots and scenes
- With predominantly ambient sound, the original sound of the take (in the case of RVR productions), as well as voiceovers, which explains or highlights details of particular interest in the content shown
- With scenes and shots displayed sequentially; in other words, that the proposed narrative is coherent
- With no conventional images subsequently superimposed in order to highlight details in the immersive content
- With no sign of the tripod (in RVR productions)
- With moving scenes or shots

By contrasting some of these results with the data collected in the group dynamics, we can add that:

- Additional texts should be used rarely, and, when used, should not be invasive when compared with the image. Preferably, they should be used at the beginning or end of a production.
- Voice over is a useful resource, but should be used intermittently, ensuring that the original audio of the shoot (in RVR productions) should predominate. It should only be used to highlight very specific aspects or details, in particular for adding context.

- Although there was no consensus on the elimination of signs of the tripod (in RVR productions), its appearance was not considered to infringe on the content and could be understood as secondary action in postproduction.
- Moving shots or scenes give a greater sense of realism in the experience of immersive consumption; however, static shots or scenes are equally useful, but should be interspersed in video productions with these characteristics.

Although the extent of the content was not among the objectives of this study, it seems to be important to note that Video 1, produced by the Venezuelan NGO Redes is 1 minute 53 seconds long and Video 2, by *The New York Times* is 3 minutes and 30 seconds.

As well as the objectives of the study, the results of the surveys also show that, for most participants, the narrative of multimedia content with an immersive capacity is more attractive than content made in a conventional format. Of course this does not mean that one format should replace the other, but it does lead to a consideration of these possibilities with regard to specific topics when it is considered essential to ensure greater interaction and rapprochement from the public.

With that in mind, as shown in Graph 6, there is consensus that multimedia content with immersive capacity invites the audience to engage more with the topic presented, and therefore undoubtedly constitutes a powerful tool for connecting the public with the content, for example when covering social and political issues.

Although research by Hendriks *et al.* (2019) and Shin and Biocca (2018) is decisive in this regard, thanks to the disposition of the participants we were able to ratify this aspect, taking into consideration the different geographical location (Spain) and age group (Generation *Z*).

The interpretation of these results leads us clearly to standards of consumption that allow us to achieve the aim of this investigation: propose a standard or model of fully immersive virtual reality narrative and, thereby, contribute to its inclusion in the day-to-day consumption of audiovisual content, building more engagement. Likewise, these conclusions allow us to provide the scientific and professional community with a series of essential points for content design and production.

With the aim of improving the results of the first objective, we proposed a second: to make a comparison between the audiovisual narrative of analogue media and the narrative of virtual reality and formats with immersive capacity, in order to highlight how it needs to be transformed, as well as the need for the scientific and professional community to produce manuals with regulations and guidelines for the conception, design and production of virtual and immersive content. This comparison also demonstrates which elements of traditional audiovisual narratives are still valid in terms of how we see and look, and which elements should be transformed or adapted.

We start from the fundamental premise that virtual reality content is immersive simply because it is 360º, which means that it more closely resembles our way of seeing. Hence, the results of the proposed study show that this is the most attractive content and bring viewers closer to the facts being narrated.

From this perspective, in regard to the interpretation of the results obtained, we observe that there are different degrees of immersion in relation to the proposed narrative model which is related to the ideation of the content, and whether the way it is filmed and produced is conceived for virtual reality and 360º or for analogical narrative.

Indeed, as we have stated, a virtual reality format is immersive simply because it is in 360º, as have seen, but if its ideation and production are conceived from the analogical perspective, the immersion model fails. And this is because the change and transformation implied by 360º virtual reality in contrast to traditional narration occurs because it breaks fundamentally with the basic unit of meaning: the shot.

The shot jumps through the air to become multiple shots and multiple perspectives, as many as the consumer of this content wants to navigate from the 360º shot predesigned by the creator. We enter the fourth dimension, to the same extent that Picasso radically broke with the linear perspective (2D) to move into the fourth dimension (a conceptual proposal of 3D in the static format of painting, in a purely spatial dimension) with Cubism.

Now we have the opportunity to broaden this experience with the dimension of audiovisual language, time, movement, Thus, keeping in mind that with these formats we move from a specific number of shots and angles (wide shot, medium shot, profile shot, etc.), now we have the 360º or panoramic shot (Oliver, 2017), with multiple shots and/or perspectives which must be pre-designed by the content creator.

According to Oliver's *El color del sol. Narrativa Audiovisual y Realidad Virtual* (2017), the pre-design of content must be determined by different levels of attention, the main one through which the action is developed and which draws the viewer's gaze, and secondary ones that viewers discover themselves through their own navigation and choice of framing and which reinforce the main point of interest without being lost during navigation.

Once it has been established that the main breakthrough is from the shot as a basic unit in analogic formats to a 'panorama' as the single shot, the narrative design in terms of reading modes of audio-visual language in the sense of its capacity for immersion and empathy with the content, retains many similarities with the traditional narrative, in relation to the results of the study.

The sequential and coherent order between shots and scenes to lead the direction of our gaze, points directly to our way of reading the traditional audio-visual format and the fundamental basis of the construction of the story in said narrative. It is related to the *raccord* or continuity. In the case of virtual reality formats, we must speak of *stitching* to achieve this continuity and direction of the gaze.

On the other hand, more moving shots are required to achieve greater immersion or a better imitation of our way of seeing (which is what primary immersion achieves). This aspect is very similar to handheld camera shots in traditional narratives when the director wants to dismantle, to some degree, the artificiality of the cinematography lens as an intermediary between the story they want to narrate and the spectator, emphasising the ordinariness of the scene that is being shown (think, for example, of many of Woody Allen's films). As in these scenes, in order not to excessively unbalance, the viewer's gaze is interspersed with static shots. Basically, this is the aspect that those surveyed noted in relation to the use of moving shots.

Finally, in relation to other narrative elements analysed and about which we asked the young people in the study, something similar happens. Additional text and/or images should only be included rarely in order to achieve greater realism and/or immersion.

Also, the fact that technical elements of the recording process such as the tripod appear, apart from exceptions in the cinema like the Dogma 95 movement, the appearance of these items have nothing

to do with the realism and/or ordinariness of the scenes shown, but rather as a distorting element in the immersion in the story. Our results show that the same happens in 360º virtual reality.

The survey showed similar conclusions on the use of sound: its use is an exponentially immersive element both for stories in traditional format as well as for immersive virtual reality formats.

7. Conclusions

The disparity evident in some responses, particularly when we compare the groups participating in the discussion sessions, shows the breadth of criteria and tastes in the audience, which is one of the main characteristics of the profound and accelerated process of audience segmentation as a result of the digital revolution.

Regardless of whether individuals belong to the same segment, same generation, or even socio-economic status, preferences in relation to content are increasingly wider and display more differences, which makes the process of creation and production more complex for those generating it: in the particular case of this study, journalists and the media.

The surveys carried out, as well as the group dynamics of the young Spanish audience, have allowed us to demonstrate some basic elements for the creation of news content in multimedia formats with immersive capacity, based on the direct experiences of the users.

There is no doubt that there must be greater commitment on the part of the media and journalists to innovate and, above all, to raise awareness about the turning point for this format, especially in Spain.

There is demand and interest, but the process of journalistic development and innovation does not appear to be in step, despite the existence of half a dozen innovation laboratories in Spain (López and Ufarte, 2016; Salaverría, 2015), the most recent of which is run by *El País*, and was created at the end of the first quarter of 2018.

In this sense, we think that this study is an important contribution to these laboratories, providing them with a 360º virtual reality immersive narrative model, and which allows for the consolidation of the consumption of this content in the context of our study: journalism. This is shown in the conclusions drawn from the interpretation of the survey results and the discussion groups. What narrative patterns follow in regard to our way of reading the audio-visual image and consumption of these immersive formats.

On the other hand, in the case of *El País*, as for *RTVE*, who regularly produce experiences in virtual reality and news coverage in 360º with immersive capacity, although is related to the development of another investigation, we consider that there must be greater promotion of these contents, as well as their classification apart from the multimedia sections, as *El Deporte Conquense* (see http://eldeporteconquense.com/category/360o/) has done in local journalism, not just to encourage consumption but to reach as wide an audience as possible and provide the necessary visibility to more interactive content and with different perspectives to traditional formats.

Pérez-Seijó *et al.* (2018) warn that only 29.63% of public European media organisations that produce immersive news content have a specific department dedicated to organising and promoting this kind of content.

We are talking of a resource that is essential today for strategies for increasing the dissemination of news coverage, which in the journalistic field is widely accepted in the international media, consolidated as one more format in the way news is presented. Therefore, it not only requires greater promotion, but also a basic production and post-production framework or requirements to ensure wider distribution, as well as greater engagement, in audiences that don't consume media and news through traditional channels, as well as provide a different perspective for the news item for those users who want to learn more about it.

Finally, we consider that, given what has been revealed through the interpretation of the data, we are in a position to state that we have achieved, to some degree, a proposal for multimedia narration with immersive virtual reality capability in news media.

As a last point, we reflect anew on the fact that we currently do not have enough tools, studies and/or arguments to determine whether the similarities that we have uncovered between reading models, between the narrative model and other types, relate to how our models for reading images have been conditioned by our audiovisual education and how the gaze has been educated and trained over the decades that have preceded us of audiovisual narrative and digital context. In other words, whether it is just a question of whether our way of seeing (assuming that seeing is a cultural question) will be formatted and whether we will have to rewrite the models suggested here.

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