

A METAVERSE FOR THE NEWS: Possibilities in the production of journalistic content from immersion experiences

UM METAVERSO PARA AS NOTÍCIAS: Possibilidades narrativas a partir de experiências de imersão
UN METAVERSO PARA LA NOTICIA: Posibilidades narrativas desde experiencias de inmersión

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ABSTRACT:

The potential of emerging technologies such as augmented reality and virtual reality in the process of producing journalistic content is analyzed within what has been called immersive journalism, insertion or experiential journalism. From a sample of recent use cases, with a greater focus on synthetic visualization formats and infographics, it was possible to identify a new set of reconfigurations and possibilities for improving experiences regarding news consumption, based on hypermedia elements and systems based on the concepts of immersion and presence.

KEYWORDS: Immersive journalism; Metaverse; Virtual reality; Augmented reality; Infographics.

Introduction

The transformations that the digital media ecosystem has imposed on the journalistic content production process are not limited to occasional eventual changes in the equipment, techniques or practices used, but constitute a complex set of reconfigurations, adoptions and discontinuities that involve economic, technological and social factors still in progress and, therefore, difficult to understand, at least in its entirety.

Since the beginning of the 21st century, with internet infrastructure growth and subsequent popularization of digital media and its myriad uses and appropriations, the academic effort to map out such changes has initially been done based on a more general analysis which can be found in several texts, some of them present for more than 20 years such as in Castells (1999); Chwe (2000); Feenberg (2002); Lemos (2002); Santaella (2003) and Vilches (2003).

With a greater focus on journalism, we can identify several topics or lines of analysis. Initially, from a gradual abandonment of a purely utilitarian view towards change, which considered that computers and networks were just new equipment that arrived in newsrooms, like so many in other times, heading towards recognition of a

paradigmatic transformation that involved changes in news format regarding their production and distribution, relationships with those who consume them, the business models that for decades had made the industry viable, reaching the need for training and professional refreshing.

Another attention getter was the use (and consequences) of databases and content management systems in journalistic companies, mainly supporting newsroom backends, that is, the processes that run behind what those who consume the information see. The work of Barbosa (2007, 2008, 2009, 2011) regarding the JDBD paradigm, in reference to digital journalism in databases, as well as other authors who have written on the same topic (Fidalgo, 2004, 2007; Machado, 2006; Ramos, 2011a, 2011b) citing databases “as defining the structure and organization, as well as the composition and presentation of journalistic content” (Barbosa & Torres, 2013, p. 154) are some of the various works along this line.

At the center of this discussion is the relation of reconfigured journalism based on increasingly used computational resources. What used to be only internal, structured based on data, started showing new possibilities, even narratives based on several ramifications of an evolutionary line which starts with the idea CAR – computer-assisted reporting¹, goes through the previously cited JDBD and by data-oriented initiatives common to integrative journalism, currently reaching contemporary studies about so-called computational journalism with several ramifications and possibilities.

Studies about productive process automatization with software writing journalistic texts can be found in Carreira (2017), which talks about journalism done by humans and Višnovský, Ungerová e Kubíková (2019) who use the term robot journalism. Other authors prefer automatized journalism and robotic journalism (Maier, 2002; Dalen, 2012; Carlson, 2014; Clerwall, 2014; Lewis & Usher, 2014; Latar, 2014; Santos, 2014; Santos, 2016a; Graefe, 2016) when dealing with similar processes.

The internal perception regarding changes in the production process based on using algorithms and automatization is another branch found in the found in the research similar to that of Rubio and Ruiz (2020) and López, Bran and Requeijo (2018).

More recently, interest in artificial intelligence and algorithms has also grown, related in part to the enormous volume of information available in the contemporary media ecosystem. In this regard, precursors of these discussions that include the concept of big data and phenomena characterized by processes whose characteristics

¹ The idea of journalism accuracy by Mayer can be considered a precursor of this branch.

are the speed, variety and volume of information produced can be found in González-Bailón (2013); Lewis; Westlund (2015); Lima Junior (2012) and Mahrt; Scharkow (2013).

The application of emerging technologies such as artificial intelligence – AI (Coppin, 2010), internet of things – IoT (Santos, 2016b; Santos, 2016c), virtual reality (Santos, 2019a), augmented reality (Santos, 2015) makes up a parallel line and are also unfolded in the concepts of immersion journalism and experiential journalism. A review of AI and journalism interface can be seen in loscote (2021).

In this text we are more focused on the changes, alterations and new narrative possibilities arising from the forms of seeing information, as in the formats of infographics, when they find the emerging technologies mentioned above, exploring hypermedia elements and systems based on the concepts of immersion and presence. Based on the analysis of real examples, we intend to raise possibilities of use and raise factors that may or may not enable such solutions on a larger scale.

The metaverse concept (not so new²), especially based on the gamble of big tech companies³ being able to draw a lot of attention these days provides the context. The term metaverse, although not yet fully consolidated, generally refers to initiatives of connecting activities in the real and synthetic worlds, created by computers, where through individuals' digital representations, using avatars, for example, we can overcome physical and temporal barriers, in a kind of parallel world already explored by games and cinema such as in Matrix⁴ or Player One⁵, only now, as an environment for social interaction, entertainment and work. The metaverse would be, in theory, the set of these various possible virtual worlds, in a way, like today how the internet is the set of existing digital networks.

Thus, Patterson (2021) reinforces the term's conceptual foundation, consisting of a triad that involves an identity system, allowing any individual to assume an identity in a given environment, universe or group; the economic system, for exchanges and monetary and also symbolic relationships and, finally, the user experience in which the individual is inserted into this environment.

Is it possible, then, that contemporary journalism and its forms based on virtual reality, interactive infographics and synthetic visualization find a way to reconnect their audience within the metaverse, which is fragmented with an undervalued news

² The term metaverse appears for the first time in the book "Snow Crash", by Neal Stephenson, released in 1992, the exemple of old platforms such as Second Life, or game and movie experiments such as the Matrix movies.

³ In 2021 the company Facebook changed its name to Meta, indicating, among other things, a change in focus to solutions and tolos directed at connecting real and virtual and virtual worlds.

⁴ *The Matrix* (EUA, 1999). Direção: Lana Wachowski, Lilly Wachowski.

⁵ *Ready Player One* (EUA, 2018). Direction: Steven Spielberg.

product? Especially when we think about the new generations. If there is still little data to define such responses, it is possible to map examples of use where these efforts to open new contact interfaces with the public are already happening and are no longer futurology, but real attempts at innovation and survival. In this article, we start with them to identify trends and developments in an industry that seeks solutions.

Increased journalism activities for experienced-based journalism

To begin with, it is necessary to approach the conditions inherent to this language and to the metaverse. This point is part of the immersion perspective. Immersion and presence are two very complex concepts that have different interpretations in different knowledge areas and range from more mechanistic views relating inputs and outputs of a given stimulus system to views that consider subjective and individual aspects of the aspects that are offered⁶.

Current immersive means, provided by technology, expand people's possibilities. Through devices, they can offer a specific scenario for the places they dream of visiting (Murray, 2003). In this way, the digital environment leads them to places where fantasies are realized, and realities are confused.

Therefore, starting from the author's logic, immersion is a terminology given to explain the movement of consciousness between possible realities. The term derives from the physical experience of being submerged in water, according to Murray (2003), involvement in another reality, and in view of its various facets, there is consensus in its essence, but not regarding its manifestation.

In this discussion, Cordeiro and Costa (2016) demonstrate that consciousness can be exercised not only by technological devices but also by artistic ones. Theater and language, as well as new technologies, for example, transit sensations. These are experiences that Grau (2007) defines as the "decrease in the critical distance of what is shown and the growing emotional involvement with what is happening" (Grau, 2007, p. 30).

Despite being an intellectually stimulating process, immersion, in the present, as in the past, is mentally absorbing in many cases regarding developing a process, change, and transit from one mental state to another. [...]. The majority of virtual realities experienced almost completely hermetically sealed off from the perception of the observer's external visual impressions, attract attention with plastic objects, expand perspectives in terms of real space in illusional space, observe the color and scale correspondence and, as the panorama,

⁶ More details about both concepts and several unfoldings about immersive systems are discussed in Santos (2019a).

makes use of indirect light effects so that the image appears as the source of reality (Grau, 2007, p. 30).

In this context, Longhi and Caetano (2018) see the importance of "experiential journalism", a concept reinforced "from the viewpoint of production as well as that of fruition, as seen in those produced in VR⁷ and AR⁸, that are frequently presented as "immersive experiences" (Longhi; Caetano, 2018, p. 2).

In fact, the authors reinforce the findings pointed out by Wattson (2017) in the report by the Reuters Institute for the Study of Journalism, at the University of Oxford, in which she states that journalists and newspapers have been devoting greater attention to how to tell stories through experimentation, such as virtual reality and augmented reality. To this end, Wattson (2017) interviewed professionals from newspapers such as the New York Times, USA Today, Network, Die Welt, ARTE, The Guardian, Sky and Euronews, and observed that the vehicles intensify content production in this sense.

Synthetic visualization and journalistic production

How and what is the importance of what comes to be called synthetic visualization in this journalistic and immersive environment? Infographics and synthetic visualization are part of a common nomenclature, although not widely disseminated in research. This relationship was based on studies by Sancho (2012) about his survey on "infodigital synthesis" (Sancho, 2012, p. 9). Manovich (2011, p. 148), in turn, defined visualization as "mapping between discrete data and visual representation", even recognizing that it is not easy to find a consensual or absolute explanation of the term.

Visualization moves from the mind and materializes into a supporting. This materialization occurs through systems that can be captured or synthetic. The capture takes place when using equipment that can capture the environment, such as photography or filming devices. Sancho, Rodriguez and Ochoa (2014) consider these types of capture as items that vastly integrate expanded visualization, not the data visualization itself. In this case, data visualization is a different kind of visualization it is not elements captured from everyday life. They are representations built with information from everyday life and presented synthetically. Thus, there is an unfolding of information visualization: synthetic visualization.

⁷ Abbreviation for virtual reality.

⁸ Abbreviation for augmented reality.

Sancho (2012) reiterates that the digital age has brought about drastic changes in the forms of graphics, especially in media such as television and online newspapers. Given this aspect, synthetic visualization stands out as an “interface image” (Català, 2010) and not so much as a device. It becomes a kind of textual image (Pietroforte, 2007)⁹, that values visual representation when compared with the previous ones. Linked to this are the strong expressive capabilities and immersion in the most sophisticated models that are reconfigured in hypermedia.

Thus, in this article, we consider theoretical and empirical perceptions about the expression and development of immersive synthetic visualization, called journalistic hyperinfographics (Cordeiro, 2020)¹⁰. We selected an example of an experimental nature and another one published in the mainstream media, both to exemplify the emergence of an innovative paradigmatic model in terms of synthetic visualization in journalism.

We can think of infographics and recent manifestations in immersive environments, such as hyperinfographics, as an element of synthetic visualization. In this sense, the fact that the synthesis consists of the organization of infogrammar components, at the same time means establishing a dialogue among the infogrammar. Thus, synthesizing is translating raw data into visual information, which means working with elements that are realistically created and not captured from real environments.

Virtual reality, augmented reality, third dimension, mixed reading structures, vertical or horizontal, use of special glasses and insertion modes in different devices are some of the ingredients that make up such a language manifested in hypermedia and that rises as a genre of a technological environment in constant transformation.

Analysis

The Jumper Project

At this crossroads, the Media Convergence Laboratory (LABCOM) of the Federal University of Maranhão (UFMA), a virtual reality system is being developed for

⁹ Pietroforte (2007, p. 33) points out that images, while being a manifestation, is a polysemic term that embraces variants like painting, photography, sculpting and architecture. Meanwhile, the image is also text “when it is understood that image is also that which can be seen”.

¹⁰ Hyperinfographics consist of broader characteristics and dynamics compared to infographics in the online environment. It is based on the hypothesis that hyperinfographics are models or a set of infographic models with high expressive capacity, available in the hypermedia environment and acting autonomously. The properties of synthesis, interaction, autonomy, hypermedia, immersion/aesthetic visuality and syntactic synchrony, which emanate from hyperinfographics (Longhi; Cordeiro, 2018), serve as a basic categorization that makes it possible to discern and identify hyperinfographics.

journalism. According to the researcher, it was initially planned that the Project would not deter specific content from being produced in virtual reality but as a “system that would function as a player of this type of content” (Santos, 2019, p. 140). The focus of this project called Jumper¹¹ is exploring the control interface and how the user should execute it.

For this, the project has been developed into three modules. The first is focused on emitters, through traditional things and user layers. These are monitored by a system that selects the journalist's topics of interest and displays them in a virtual reality environment or by a similar device, considering what he calls insertion levels (Santos, 2016).

The second module works with location, where the user is inserted into the event scenario. With clickable virtual resources, this user can select places and channels, while receiving text information “screenshots” of articles published in journals.

For this module, the project recreated the Bataclan concert hall in Paris, France, as the target of a 2015 attack. “It's one thing to see it on a screen or in a TV report. In Jumper, the idea is that you are in the scene, that you have 360-degree access, and feel like you're inside that environment” (Carneiro, 2016).

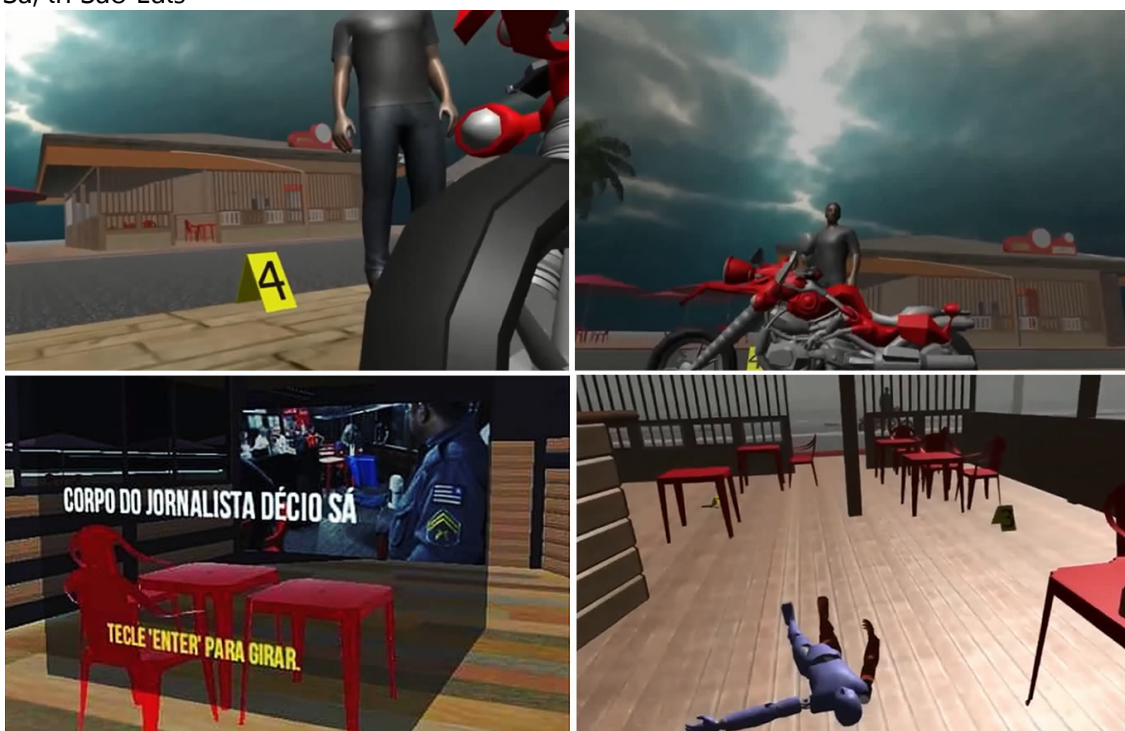
The third module is the so-called “Delivery Module”, in which the content will be ported to the virtual reality device. There is a conjunction of VR and leap motion devices that allow the user to be inserted into the virtual reality environment, at the same time, interact through a virtual “hand” that activates buttons with equally virtual control. The path, designed by Jumper, allows the user, through clicks, to change the news in virtual reality and be in different locations, such as a music concert, a football game, or a realistically created murder scene.

Jumper develops experiments of what we consider to be hyperinfographics, such as the murder of journalist Décio Sá in a bar in São Luís, the capital of the state of Maranhão (figure 1). Ongoing access to the material provided by the laboratory has led us to realize that it is a case of reconstructing the crime scene, where the user is invited to enter the murder scene and obtain additional information from screens that appear along the way.

¹¹ In the Jumper project presentation video, Santos (2016) starts from the premise that society's need for journalism is unalterable. However, this reconfigured journalism promotes changes in the manner in which news is delivered. The researcher's vision is on the present – in the face of patent changes –, but it has a more longitudinal focus, with the purpose of producing an immersive environment for consuming journalistic content. Consumption, in this case, is active, where the user has “contact” with the content. JUMPER Project - LABCOM Immersive Environment for News Consumption (2016). Available at: <https://www.youtube.com/watch?v=nmmT5Wt043g>

The user can look into the bar as if he were on the street in front of the establishment, hear the ocean waves, listen to the approaching steps, and come across number plates along the way that provides journalistic content. In images and texts – which is essentially characterized as hyperinfographics, by adding all the morphological properties listed that we built as a way of identifying and specifying the nature of this format: synthesis, interaction, autonomy, hypermedia, immersion/aesthetic visuality and syntactic synchrony (Cordeiro, 2020).

Figure 1 Reproduction of hyperinfographic scenes about the murder of journalist Décio Sá, in São Luís



Source: Project developed and authorized by Jumper and unpublished.

It is possible to have a 360-degree view of the establishment and approximate dimensions of the location where the journalist was murdered. Although unpolished and still restricted to the researchers, the hyperinfographic explores and suggests new forms of news consumption, here with the total reconstruction of the environment from software produced for video games, Unity. This developing hyperinfographic is a combination of improved multimedia elements.

Even without being mentioned by name in project texts, which began in 2016, the possibility of offering informative content in virtual reality environments is fully aligned with the idea of the metaverse, in this case, synthetic, but originating from real facts.

Virtual and augmented reality

We noticed some hyperinfographic models published in Brazilian magazines. In 2017, *Veja* magazine produced infographics in augmented reality on the editorial staff's initiative. This is the case with "Star Athletes' Salaries in the Facebook Chamber"¹² (*figure 2*), produced by Sidclei Sobral, about the highest salaries of world athletes in 2019). Using a mobile device, it is possible to view the amounts of money corresponding to the salaries of the athletes LeBron James, from basketball (R\$103 million), Tom Brady, from baseball (R\$4 million), and Neymar, from football (R\$23 million). The hyperinfographic shows the proportional representation of the amount in money stacks.

The professional responsible for the piece, Sidclei Sobral, reported the difficulty of manipulating the Spark AR Studio tool (for creating Facebook camera effects) to develop this and other immersive experiences. He also noticed improvements in the platform, which will improve new content. "This experience is the first of many. We will review user feedback to see how we can improve for future ones. I believe this is the first time that any media outlet is using the Facebook platform to develop immersive content" (Sobral, 2019)¹³.

In other situations, it is important to point out the vulnerability of projects of this kind developed by newspapers for mobile device apps. There are examples which simply disappeared after a short time of publication, making it impossible to access them.

One such example is the 2015 hyperinfographic produced by Fusion Interactive in virtual reality about the Malofiej award-winning blue whale (*figure 3*). The work consisted of showing the animal's dimensions and, thus, the user was placed as if he were at the bottom of the sea, observing him closely. The hyperinfographic was developed by a team of designers, including infographic designer Simon Ducroquet, who two years earlier, in 2013, integrated the video game production, conceived on the Unity platform, with the project *Tudo Sobre*, of *Folha de S. Paulo*, referring to the Belo Monte plant.

¹² *Veja's* augmented reality project. Available at: <https://bit.ly/2xJwk1s>

¹³ Experiment reported by Sidclei Sobral on Facebook <https://bit.ly/2Js6QfA>

Figure 2 Hyperinfographic in augmented reality published by Veja magazine through Facebook, about the highest athlete salaries



Source: Available at: <https://bit.ly/2xJwk1s>

Alongside infographic designer Mario Kanno, Ducroquet developed a newsgame (we can also consider it an hyperinfographic) with an interactive experience to portray the gigantic structure under construction¹⁴. The project encouraged Ducroquet to participate in the hyperinfographic in virtual reality, detailing the history of the blue whale. In the 3D model made in 4D Cinema, integrated with Unity, the hyperinfographic was constructed with the same logic as “game engines” (Ducroquet, 2015)¹⁵. Despite the complexity of making and innovation, both projects are no longer available to the public, nor can the apps be downloaded from Apple and Google's virtual stores.

Such weather conditions are foreseen in the method detailed by Yin (2001), for whom some objects are beyond the control of the researcher. However, there are hyperinfographics that can be found in consistent databases of reference journals, which we assume to perpetuate the productions. For example, The Wall Street Journal, which appealed, applying traditional infographics, a model already familiar to consumers of economic news. Thus, the play “Is the Nasdaq in Another Bubble?” offers a guided tour in virtual reality. It allows website and mobile device users to walk along the infographic lines, discovering the stock market's entire evolution as if it were on a “rollercoaster”¹⁶. These aspects establish widespread logic about the metaverse,

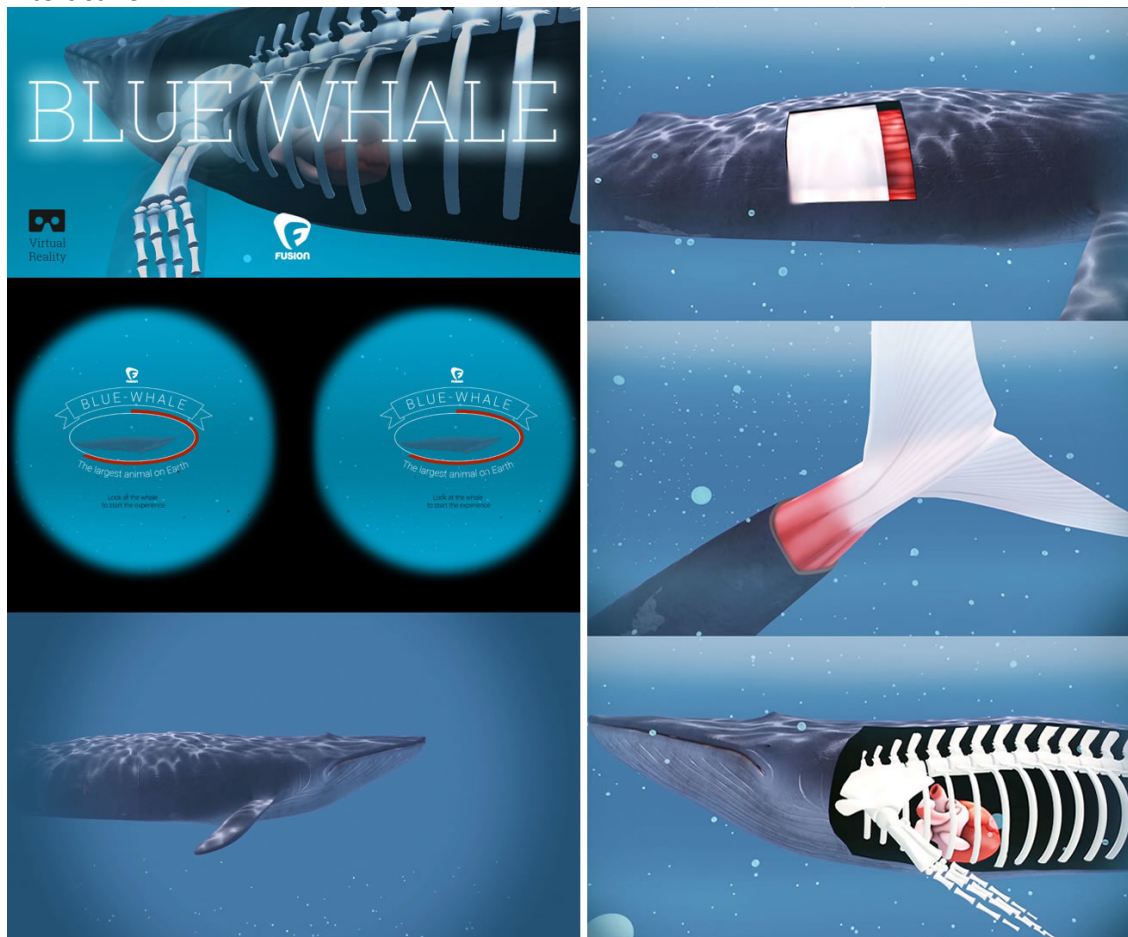
¹⁴ Game “Folhacóptero” explains the project of the Belo Monte dam. Folha de S. Paulo (2013). Available at: <https://bit.ly/2Zft5u4><https://bit.ly/2Zft5u4>

¹⁵ *Azul Whale VR*. Available at: <https://bit.ly/2XGxvOq>

¹⁶ Available at: <http://graphics.wsj.com/3d-nasdaq/>

considering its immersive, interactive and sensorial characteristics, which are constant in the structure of the hyperinfographics and models shown above.

Figure 3 The virtual reality hyperinfographic Project about the blue whale, from Fusion Interactive



Source: Available at: <https://bit.ly/2ZfPU0F>

Data on the real performance of immersive content within the journalism industry is still in the beginning. Recent but localized studies, such as that by Lopez Hidalgo, Méndez Majuelos and Olivares Garcia (2022), may indicate a trend towards reducing this type of material or, at least, the need for improvement to generate immersive materials.

Considerations

The experiences presented in this article are elements that show progress and reconfiguration in journalistic genres and formats. In the current scenario, in which broader discussions of content reception of all kinds stand out, journalism is once again inserted. After all, philosophically it is not specific to any base, but it is molded to different platforms and, many times, still unknown. In metaverse logic, a possibility that

is revealed in the present and in the language of the future, new journalistic narratives are tried and, preliminarily, presented.

The aforementioned models demonstrate the characteristics of a broad and synthetically developed universe for new experiences and symbolic manifestations. Augmented and virtual reality platforms are placed in an advanced perspective of content transmission, enabling the creation of scenarios, environments, and simulations that require the participation of users who transmute into avatars whose identity and performances in these places, are recognized in the metaverse.

Immersion, or the so-called immersive journalism, has reached new levels in terms of narratives aimed at visualization, in this case, synthetic visualization, of a broader nature, in which the user is invited to insert himself into the content and act on it. Of course, this controlled insertion is based on the previous scripting of the journalist or reporter, who continues to steer the information or news. However, the user feels more involved, interacting more strongly, with a sense of presence.

With essentially immersive and hypermedia characteristics, hyperinfographics was the focus of this study, pointing to the expressions in online journalism adapted to the connected society and culture directed to the visual. The transformations generated in hypermedia are evident at the moment when innovative formats emerge and are consolidated, therefore, we can mention the Great Multimedia Report, web documentaries and hyperinfographics, models that manifest themselves in formats such as augmented reality, virtual reality, the third dimension, between others.

The models presented do not intend to represent all the productions of this journalistic nature, however, they show how journalistic language can be, in some situations, reformatted. The outlook is optimistic, in terms of reconfiguration, not naive; much less, dazzled. This panorama is broad and unpredictable as we assume that there are several types of synthetic visualization and immersive narratives. More powerful examples tend to emerge in terms of user immersion, thus expanding their enjoyment to levels not reached today. As such, we are optimistic regarding the perennially consistent nature of immersive synthetic visualization.

Realization of Jumper studies and deliberate journalistic actions for executing models are manifestations that seek journalistic survival, given the exponential volume of online content available.

These are alternative experiences in the face of the crisis that befalls journalistic companies, pressured by circumstances that result in shrinking newsrooms with reduced investments which affect art departments and, consequently, productions in

this sense. It even seems contradictory, but this newspaper crisis practically annihilates these experiments, restricting them to the academia or individual voluntary actions.

These are complex projects that require a multidisciplinary team. There is a need for professionals in the sector to master programming code languages, which suggests to newsrooms, in many cases, bringing on multitasking teams in the production process.

In the same way, the small amount of software that facilitates work in small or medium-sized journals, or even journalistic startups discourages language development in the metaverse context. In other words, in addition to being complex in terms of production, hyperinfographics (or immersive synthetic visualization) is disseminated by a small number of newspapers, especially the reference ones.

Of course, infogrammatical structures have become broader. In the beginning, infographics faced important changes, leaving their static printed newspapers and adopting interactive elements. The user experience was precarious, with few clickable elements, until it finally reached more advanced stages, both in terms of interface and interactivity and in terms of aesthetic presentation. In this process, it reaches even deeper, more sophisticated levels in terms of interactivity, and is more participatory when considering its immersive structures.

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RESUMO:

Analisa-se o potencial de tecnologias emergentes tais como realidade aumentada e realidade virtual no processo de produção de conteúdo jornalístico, dentro do que se tem chamado de jornalismo imersivo ou também jornalismo de inserção ou experiencial. A partir de uma amostra de casos de utilização recente, com recorte mais focado em formatos de visualização sintética e infografia, foi possível identificar um novo conjunto de reconfigurações e possibilidades de aprimoramento das experiências no consumo de notícias, baseado em elementos hipermidiáticos e sistemas baseados nos conceitos de imersão e presença.

PALAVRAS-CHAVE: Jornalismo imersivo; Metaverso; Realidade virtual; Realidade aumentada; Infografia.

RESUMEN:

Se analiza el potencial de las tecnologías emergentes como la realidad aumentada y la realidad virtual en el proceso de producción de contenidos periodísticos, dentro de lo que se ha denominado periodismo inmersivo o también periodismo de inserción o experiencial. A partir de una muestra de casos de uso recientes, con un enfoque más en formatos de visualización sintética e infografía, fue posible identificar un nuevo conjunto de reconfiguraciones y posibilidades de mejora de experiencias en el consumo de noticias, a partir de elementos hipermedia y sistemas basados en los conceptos de inmersión y presencia.

PALABRAS CLAVE: Periodismo inmersivo; Metaverso; Realidad virtual; Realidad aumentada; Infografía.