Article

Newsgames: The Use of Digital Games by Mass-Media Outlets to Convey Journalistic Messages

Salvador Gómez-García[1] [ID] **and
Teresa de la Hera Conde-Pumpido**[2] [ID]

Abstract

This study explores the way mass-media outlets make use of digital games to convey journalistic messages. Newsgames have been defined by several scholars in the intersection between digital journalism and game studies. However, because of the heterogeneity of this phenomenon, there is still a lack of clarity of what could be considered, or not, a newsgame. This study aims to shed light into this question by exploring how newsgames are used in practice by journalists. We therefore approach the understanding of this phenomenon from a bottom-up perspective to give an answer to the following research question: *How are journalistic messages structured within newsgames published by online mass-media outlets?* A grounded theory approach is used to analyze 75 games published in a total of 47 mass-media digital outlets from 17 countries. The results of this study have led to the proposal of a more systematic identification and analytical approach for newsgames.

[1]Faculty of Philosophy and Literature, Department of History and Journalism, University of Valladolid, Valladolid, Castilla y León, Spain
[2]Erasmus School of History, Culture and Communication, Department of Media and Communication, Erasmus University Rotterdam, Rotterdam, Netherlands

Corresponding Author:
Salvador Gómez-García, Faculty of Philosophy and Literature, Department of History and Journalism, University of Valladolid, Valladolid, Castilla y León 47011, Spain.
Email: sgomez@uva.es

Introduction

September 12th (Frasca, 2003) was released in 2003 as a new type of journalistic discourse that was presented as "simulation that mixes news with videogames" (newsgaming.com, 2003, para.1). The idea was not original as other digital games such as *Balance of Power* (Crawford, 1985), *Chernobyl: Nuclear Power Plant Simulation* (Cosmi Corporation, 1987) or *Cessna over Moscow* (Cobra Soft/Hitech, 1987) offered this mixture before. Nevertheless, both the accessibility of the game, it was distributed online, and the simplification of the game mechanics, were novelties for this game genre that over time has become a rooted practice of independent creators, collectives and media outlets.

Gonzalo Frasca, lead developer of *September 12th*, presented the game by stating: "simulation meets political cartoons" (newsgaming.com, 2003, para.1). This way Frasca linked the definition of the game to its ability to convey a political opinion. This ontological approach to newsgames was then followed by other scholars. Burton, for example, reflects about the unique characteristics of digital games to convey informative messages by also highlighting its pros and cons: "games are generally not the best medium to report the initial breaking news […]" he claimed, "instead games have the ability to sit 'around' a news report - to give deeper context and understanding about the underlying issues involved in an issue or to explain the workings of processes or systems" (2005, p.96). Miguel Sicart, for his part, focuses on the role of the designer and the relevance of the existence of an "intention of participating in the public debate" (Sicart, 2008, p.27). At a later stage, the breadth of newsgames compelled to define them as "a broad body of work produced at the intersection of videogames and journalism" (Bogost, Ferrari and Schweizer, 2010, p.6) in the framework of procedural rhetoric (Bogost, 2007).

The undefinition and heterogeneity of newsgames have led some researchers to conclude that "there is not a generally accepted definition of the term" (Plewe & Fürsich, 2017, p.2472). This lack of an accepted definition is explained by the continuous evolution of newsgames as a genre, together with the heterogenous expressive form and evolving/professional practice of digital journalism. According to Grace (2020), the fact that this phenomenon is in constant evolution is one of the reasons why the boundaries of what could be considered a newsgame are constantly being re-negotiated. However, the lack of clarity of what could be considered a newsgame leads to uncertainty about this practice, to the extent that the journalistic value of newsgames is sometimes questioned, as they are usually perceived as engagement tools rather than journalistic content (Lopezosa et al., 2021). Therefore, it is relevant to propose a more systematic approach to the identification of newsgames, which is not only important

from an academic perspective but also from a social point of view, as it could serve to better identify the journalistic value of this type of digital content.

In this paper, we claim it is necessary to first understand how digital games are being used by professionals to convey journalistic messages, as this can shed light into how to assess if and why these could be considered journalistic contents. In concrete, an inductive grounded theory methodology was used to analyze 75 games published in 47 mass-media digital outlets. This inductive line of action has been used to approach the analysis without preconceived intentions, which we considered was necessary to overcome the existing challenges linked to the identification of this practice. This helped us to propose a more systematic perspective to identifying and categorizing of the different ways in which digital games are used to convey journalistic messages, both presented in the results and discussion section of this paper. This paper, therefore, provides an answer to the following research question: *How are journalistic messages structured within newsgames published by online mass-media outlets?*

Theoretical Framework

The academic interest in this practice is a fact. At least seventy academic publications discuss newsgames from different approaches. A literature review of these sources was conducted to identify the line-forces in the academic study of this practice. The review suggest that the academic study of this topic has been tied with three main topics: (1) the study of their role and emergence, (2) the identification of newsgames' traits and the design of analytical models, and 3) case studies of newsgames as a journalism practice. In the three coming sections, we discuss the main findings and theoretical contributions within these three research clusters, which not only serves to provide a clear overview of the state of the art but also to situate our research in the academic debate on newsgames.

The Contextual Landscape of Newsgames

The implementation of newsgames in the digital media landscape had its turning point in 2007. Before this year, the production of newsgames was blurred by other multimedia or interactive formats bolstered by individual initiatives, developers or small studios that reinforced an editorialist perception of them (Treanor & Mateas, 2009). Meanwhile, few media outlets included newsgames in their online edition, usually avoiding the term games and using concepts such as "interactive graphic" or "interactive multimedia" instead. In 2007, *The New York Times* started experimenting with a variety of digital contents and incorporated newsgames in their online edition with success, including increased web traffic (Usher, 2014). From that moment, online editions of media outlets welcomed newsgames as means to "increase levels of readership and user engagement" (Ferrer-Conill and Karlsson, 2016, p.5). So, newsgames were seen by many as an innovative strategy that could be used to fight against online users' scattered attention (Plewe & Fürsich, 2017, p. 12).

Table 1. Newsgames' Traits as Identified by Plewe and Fürisch (2017) and Wolf and Godulla (2018).

(Plewe & Fürsich, 2017)	(Wolf & Godulla, 2018)
Created in response to current events	Reference to current events
Easy to access	Easy to access
Persuasive intention	Procedural rhetoric
Supplementary to traditional news	Produced by media organizations
	Communication of information

More than a decade after *The New York Times* decided to experiment with newsgames for the first time and also experienced the positive impact of this strategy in web traffic, the efficacy of this strategy is still unclear (Burton, 2005; Plewe & Fürsich, 2017; Vobič, Dvoršak and Vtič, 2014). No conclusive studies on the efficacy of newsgames have been conducted and little is known about how this practice influences user engagement. Some researchers have explored the influence of behavioral patterns by gender, graphics, and proximity information in newsgames (Lin & Wu, 2020).

Definitional Traits of Newsgames and Analytical Models

As previously stated, there is a lack of an accepted definition for the concept of newsgames. Some scholars claim that this is caused by the heterogeneity of this practice and its continuous evolution (Plewe & Fürsich, 2017). The definitions provided by Plewe and Fürsich (2017), on the one hand, and Wolf and Godulla (2018), on the other hand, focus on the identification of traits as a primary way to develop an analytical perspective of the informative strategy of newsgames. Table 1 provides an overview of the traits identified in both definitions, which both converge and diverge in several features.

In both cases, the definition of these traits comes from a comparative review of previous studies on newsgames. The purpose of both studies was to shape an enhanced perception of newsgames focused on the capacity of digital games to convey believable messages, the capacity of newsgames to convey information in an effective manner, their accessibility, and their ability to respond to current events in the media agenda. However, when we critically analyze the traits proposed by these authors, we realize that these traits only point out the informative nature of newsgames and sideline the unique characteristics of games as journalistic media. In this way, the perception of the nature of newsgames befalls this way under the model of procedural rhetoric, failing to acknowledge the ludic and interactive nature of digital games and forgetting about the role of interpretative and opinion journalism in this practice.

Another construction of the traits of newsgames comes from the analytical models used and proposed to analyze them. Foxman (2015), for example, distinguishes between content-driven and situation-specific features to compare different applications

of digital games to convey journalistic messages. García-Ortega and García-Avilés (2020) and Wolf and Godulla (2018), on their part, developed their own analytical models focused on the intersection between their journalistic and gaming nature. These models try to identify the key issues in the creation of newsgames and the different layers of the information conveyed by them using digital games. All these studies have in common that they start from existing theoretical frameworks or sensitizing concepts to conduct their analysis and draw their conclusions. Our claim is that the heterogeneous nature of newsgames requires a more inductive data-grounded study approach to fully understand how digital games are being used to convey journalistic messages. For this reason, this study chooses to explore this practice using grounded theory as discussed in detail in the methodological section.

Case Studies of Newsgames as a Journalism Practice

Case studies about the use of newsgames are the most recurrent type of papers in the academic literature on newsgames and cover a wide range of topics. The most common are case studies about sports newsgames (Rojas-Torrijos, 2020), political newsgames (García-Ortega & García-Avilés, 2020), and newsgames on humanitarian crises (Gómez-García et al., 2021) among others. The conclusions of these studies reflect the tension between the use of specific game mechanics and their capacity to meet the informative premises of a journalistic content, next to the chance to offer "a noteworthy opportunity to engage audiences and provide a new news consumption experience" (Grace et al., 2016: 1).

Some of these studies also identify the empowerment of the user experience as the main reason behind use of newsgames by media outlets. Ferrer Conill and Karlsson refer to the way to "use the nature of games to empower users, and to cement one of the pillars of democracy" (2016, p.361). Along the same lines, Schulzke (2016) states that certain types of newsgames are promoted to "empower players to become more than passive players" (p. 577), in such a way "not only they change the bottom-down propaganda approach, but also create spaces for horizontal ideological debate among players" (p. 591). A pragmatic point of view has concluded that newsgames have emerged to offer a more personalized news experience and a playful content (Arafat, 2020).

Finally, the last aspect of newsgames as a journalistic practice concerns their development and production. Examples of this are studies that explore newsgames' development in media (Dowling, 2021; Grace, et al., 2016), their use in the context of a jam (Grace, 2018) or as a project-based practice to benefit journalism education (Siitonen et al., 2019). These studies highlight the opportunities and challenges of newsgames development and the need for a multidisciplinary team to succeed.

As a conclusion, this literature review shows that the broad body of research on newsgames illustrates the heterogeneity and diversity of newsgames, but is still lacking an overview of their development, evolution, and use in practice by professional journalists, which is the object of study of this paper.

Methodology

This study takes a qualitative approach in order to understand how digital games are used by mass media outlets to convey journalistic messages. The interpretative nature of qualitative research was identified as the best to achieve the main purpose of this study. In concrete, grounded theory (Strauss & Corbin, 1990) was selected as the data analysis method, as our purpose was to examine emerging data instead of using an existing theoretical framework. This decision was taken since existing theoretical positions on newsgames come from studies that have approached the analysis of these games from a deductive perspective, in which existing theories from the field of game studies and other fields such as the field of journalism were used to analyze newsgames. There is also literature on this topic that theorizes on the potential of newsgames without grounding the theory on existing practices. However, taking into consideration that deductive approaches resulted in too vague or too restrictive understandings of this practice, we decided to take an inductive approach in this study, in which the phenomenon of newsgames is explored from a ground-up perspective.

Sampling

A total of 75 newsgames constitute the sample for this study (see Appendix 1). The newsgames that make up the sample were published on mass media websites around the world between the years 2000 and 2019. The games were published in 47 different media outlets and a total of 17 countries. The selection criteria were as follows: (1) digital games published on mass media outlets' websites; (2) not including advertising messages; (3) published in English, Spanish, Dutch, or Portuguese or using no written or oral language (taking into consideration the language proficiency of the researchers); and (4) published between 2000 and 2019 (both inclusive). The time lapse begun with the first newsgames published by media outlets and finished, at the end of 2019, when we began the codification and analytical process of the sample.

The sampling method used in this case was comprehensive sampling (Gray, 2004), following the logic to examine every single case we were able to find that was meeting the sampling criteria. Due to the lack of existence of an exhaustive database of newsgames, the sample analyzed in this study were located through a systematic online search. This process included: (1) a Google search in which newsgames were located either through direct links or links to existing although not exhaustive listings of newsgames; (2) databases from associations like *Games for Change*, *Serious Games Classification*, and lists elaborated from professionals such as Robin Kwong, D'Agostino, Lindsay Grace, and Katy Huang; (3) all newsgames referenced in the literature review; (4) a search on the online databases of media outlets that lead media traffic according to Alexa Internet or those who published a newsgame following the previous criteria. To conduct this online search, the following keywords and combination of keywords were used: "newsgame," "video game journalism," "digital game journalism," "video game information," "digital game newspaper," "digital game

information," "interactive infographics," "multimedia interactive," and "informative digital game that were combined with Boolean operators in the native language of each media outlet.

All games that met the sampling criteria, a total of 132, became part of the preliminary sample of this study. From these 132 games, 57 were not accessible or not playable anymore, which yielded to the final sample of 75 games. We acknowledge that the sample is not an exhaustive list of newsgames. The lack of a complete database prevents us from having access to all newsgames designed and published by mass media outlets. Besides this, the language proficiency of the researchers involved in this study, also limits the games analyzed. We acknowledge that this limitation only provides a western perspective into this phenomenon. Nonetheless, we tried to balance these limitations by broadening the time scope of the publication date of the games included in this analysis, and also by diversifying the searching process, to be able to include as many games as possible in our sample. Considering that newsgames are still a sparse practice in the field of journalism, the compromise of including all games meeting the sampling criteria, and analyzing a total of 75 games, supports the *validity* (Silverman, 2011: 291–314) of this study.

Data Collection and Data Analysis

The 75 newsgames of the sample were analyzed between April and December 2020. All of them were played several times by each of the researchers, exploring multiple options (paths) in the game. The gameplay was recorded and screenshots of relevant moments were taken. All these items were stored and analyzed using *Atlas. ti,* following the grounded theory analytical method explained in detail below.

The use of grounded theory began with a first exploratory phase; the two researchers analyzed five games independently following the three different stages (open, axial and selective coding). In the first stage, all types of open codes were used to analyze the sample with the purpose of not limiting the analytical approach. Open codes related to game mechanics, game aesthetics, persuasive, and communicative dimensions, as well as topics covered in the game were included at this stage. After the open coding phase, both researchers proceeded individually with axial and selective coding, and explored possible answers to the research question. The axial coding phase is a second coding stage in which several open codes are combined into different categories. Finally, the selective coding phase, is the third coding phase, representing yet another narrowing of the analysis, in which axial codes are combined into categories, which will provide the ground to answer the main research question.

It was not until the selective coding phase that we attempted to establish connections to the existing literature, by employing theoretical sensitivity as suggested by Glaser and Strauss (Glaser & Strauss, 1967). After this, the two researchers analyze together the results of the exploratory phase and compare their visions. Considering the inductive nature of the process, the researchers did not expect to find identical codes, but either complementary and consistent codes able to enrich the discussion and

conclusions of this study and ensure *reliability* (Silverman, 2011). At this stage, the researchers concluded that current newsgames' definitions were not useful to decide if most of these games could be considered newsgames or not, which opened a conversation about which approach should be taken into consideration for this decision. The results of the analysis showed that these games convey not only informative but also interpretative and opinion messages. Taking this into consideration when trying to decide on the best approach for proposing selective codes it was concluded that using the analytical lens of traditional journalistic genres was appropriate to be able to label a broader number of games as newsgames with a clearer argumentation. Our approach took into account a traditional distribution of formats divided between informative, opinative, and interpretative genres (Melo & de Assis, 2016) and emerging new genres and formats (Mast et al., 2017). For identifying game genres, we used Wolf (2005) game genre classification for theoretical sensitivity. We offer in Appendixes 2 and 3 the classification of journalistic and games genres used at this phase.

Once that the researchers had a clear vision about how the analysis should continue, both did analyze the complete sample independently in three different stages (open, axial, and selective coding), following the grounded theory procedure (Strauss & Corbin, 1990). After each of the stages, the researchers met to compare and adjust the results before proceeding with the next stage. This was done in an iterative manner, namely, open, axial, and selective codes assigned to games were revised several times until theoretical saturation was reached.

Results

The analysis revealed a total of 46 open codes, seven axial codes, and three selective codes (see code tree presented in Appendix 4). The open codes reflect the topics covered by these games, the game genres used and the type of journalistic message covered. From these open codes a total of seven axial codes were selected, connected to journalistic genres. Finally, the three main selective codes were labeled as follows: *interpretive newsgames*, *informative newsgames,* and *opinion newsgames*. These three selective codes are discussed below in connection to their axial codes and relevant examples from the sample.

Interpretive newsgames

Interpretive newsgames emphasize the motives and significance of the event presented, rather than just presenting empirical information about it. Thirty-eight out of the 75 newsgames analyzed in this study took this form, which was therefore identified as the most popular type of newsgame, which in our sample exhibited as either an *interpretive reportage* (32) or a *chronicle* (6).

The journalistic genre most present in the newsgames of the sample is the *interpretive reportage*. Thirty-two out of the 75 newsgames analyzed used this genre as a form to cover current issues in-depth. In traditional interpretive reportages, journalists
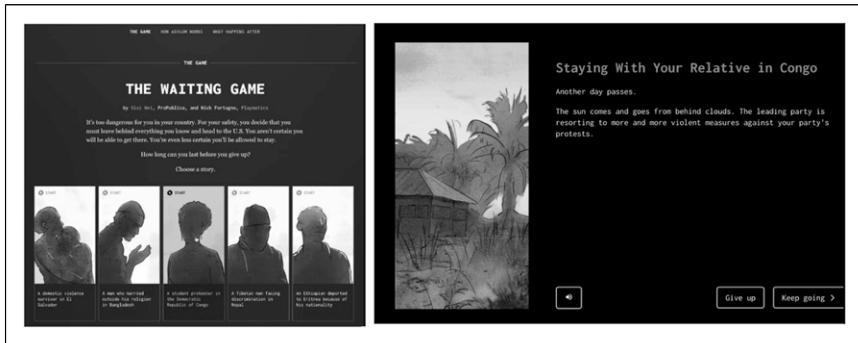
Figure 1. *The Waiting Game* (ProPublica, 2018).

may internationally bring a strong point of view, which can also be seen in the examples analyzed. This point of view is contrasted with different sources and illustrated with background information that also presents antecedents and reflects on possible consequences. This genre is commonly used by these newsgames to cover sensitive or complex topics. Examples of topics covered by this genre of newsgames are corruption (e.g., *El bueno, el malo y el tesorero* (El Confidencial, 2017)), migration (e.g., *Refugee Challenge* (The Guardian, 2014)), health (e.g., *Parkinson, que tiemble el camino* (RTVE, 2016)), international conflicts (e.g., *Cutthroat Capitalism* (Wired, 2009)), social inequalities (e.g., *Coding like a girl* (Aljazeera, 2018)) or labor conditions (e.g., *Journey to the end of coal* (Le Monde, 2008)).

An example of a newsgame in the form of interpretive reportage is *The Waiting Game* (ProPublica, 2018) (see Figure 1), an insightful view on the real experiences of asylum-seekers during years after arriving to the U.S., confronting the idea that "the U.S. is supposed to be a safe haven for people fleeing persecution." The game is based on the real cases of five asylum seekers coming from five different countries. Medical and legal professionals who evaluate and represent these asylum seekers were used as sources for this reportage, together with their file cases. The game takes the form of a text-based role-playing game, in which the player can take the role of one of the asylum seekers and experience the consequences of some of their choices during this journey. In the game, the player is involved in the difficult existence of a migrant and the purpose of this game is to convey the endless waiting and the struggle process of the asylum seekers (see Figure 1a), forcing the reader to assume a tedious task. Pressing "continue" allows another day to pass while waiting (see Figure 1b). The game length depends on the chosen story but requires between 700 and 1200 clicks on the "continue" button, which drives the game's goal of trying to make the player give up to obtain a simplified journey story (just the highlights of the reportage).

The second interpretive genre identified in the sample was the *chronicle*. Six newsgames were identified under this label. Similarly to the case of the newsgames in the form of interpretive reportage, in these examples, journalists bring a strong point of
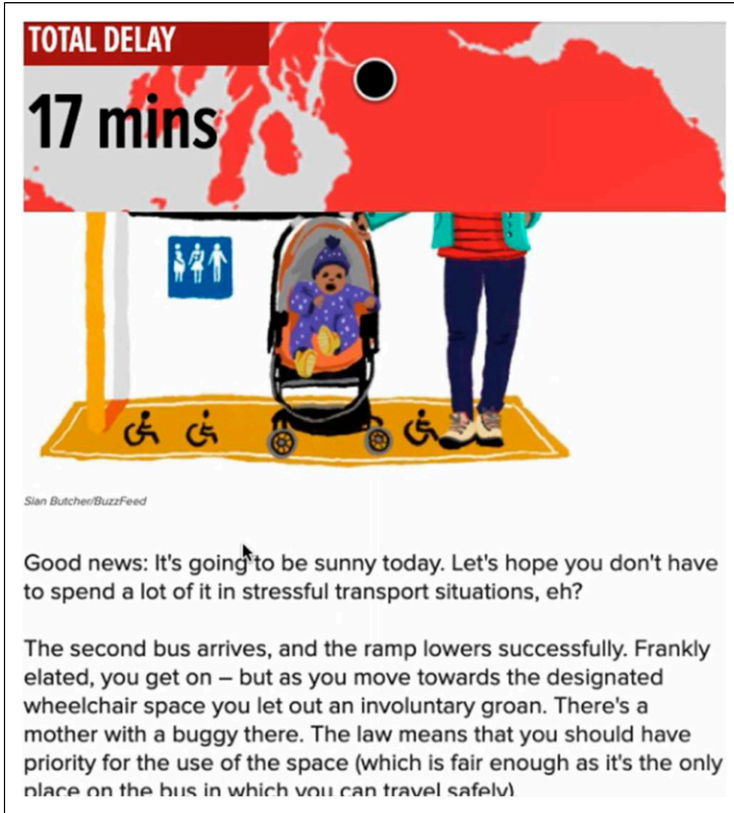
Figure 2. *Play our Game...Wheelchair User* (BuzzFeed News, 2017).

view, which is supported with contextual and background information. In the case of newsgames presented as a chronicle, the events are displayed in the order of their occurrence and share some traits with interactive documentaries. The topics covered by the chronicle newsgames analyzed in this study are migration (e.g., *Bury me, my love* (Arte.tv, 2017)), social inequalities (*Play our game...wheelchair user* (BuzzFeed News, 2017)) and sports (e.g., *I am your man* (SBS, 2017)). All of them are focused on presenting the experiences of a central character in which the order of events is relevant to interpret the story presented.

Play our Game...Wheelchair User (BuzzFeed News, 2017), for example, presents how it is to travel from Glasgow to London on a typical day as a wheelchair user (see Figure 2). In the game, in which the story is presented in chronological order, the player faces the multiple challenges a wheelchair user confronts on a regular morning commute. The player is also responsible for taking decisions to confront these challenges. The game focuses the attention on the increasing and unavoidable delay

wheelchair users must face during this journey. The point made by the journalists is supported with background information and "real testimonies from real disabled travellers" in which the player learns about less visible challenges these citizens must confront in their daily routines.

Most (27/38) of the interpretative newsgames analyzed in this study take the form of a role-playing game (18 of them in the form of a text-based role-playing game as shown in the previous examples). Other similar game genres such as simulation games or strategy games are also used for interpretive reportage in the form of newsgames. These genres lend themselves well to the interpretive purpose of this type of newsgames, as they typically require the player to carefully process background information in the form of text or videos to be able to progress through the game. These genres usually do not have a time pressure or time limitation, which allows the player to process the information provided. The narrative is also a relevant element in the selected game genres, coinciding with traditional interpretive journalistic pieces in which building the story around a narrative is common.

Informative Newsgames

The second type of newsgames identified in the sample was labeled as *informative newsgames*. Informative newsgames are fact-based objective games focused on empirical evidence of the event presented in the game. In our sample, informative newsgames exhibited as either an *objective reportage* (15) or a *news item* (13).

Similarly to newsgames in the form of interpretive rapportages, newsgames in the form of *objective reportages* use contextual and background information to present the event. Objective rapportages, however, focus on empirical data and approach the topic from an objective point of view without taking a concrete or strong perspective. This point of view is contrasted with different sources and illustrated with background information that also presents antecedents and reflects on possible consequences. Newsgames as objective reportages in the sample cover topics such as social inequalities (e.g., *Games of $urvival* (The Straits Times, 2018)), climate change (e.g., *Tu huella ambiental* (El Comercio, 2012)), health (e.g., *Heart Saver* (ProPublica, 2013)), or economics (e.g., *The game of oil* (YLE, 2017)). The construction of meaning in these games is thus inductive (players must make sense of the game by their own means from the information provided by the game).

The Australian newsgame *Catchment Detox* (ABC, 2008) is a relevant example of how an objective reportage can be structured within a game (see Figure 3). The challenge of the game is to manage a river catchment so that after 100 years you have a healthy environment but also a healthy economy. The balance between economic and environmental consequences of the player's decisions is what makes the game challenging, but also informative in an insightful way. For each of the decisions that needs to be taken, the game provides the player with real contextual information, and after each decision the player can see the consequences in both the economy and the environment. All information provided is fact-based, and there is no strong perspective
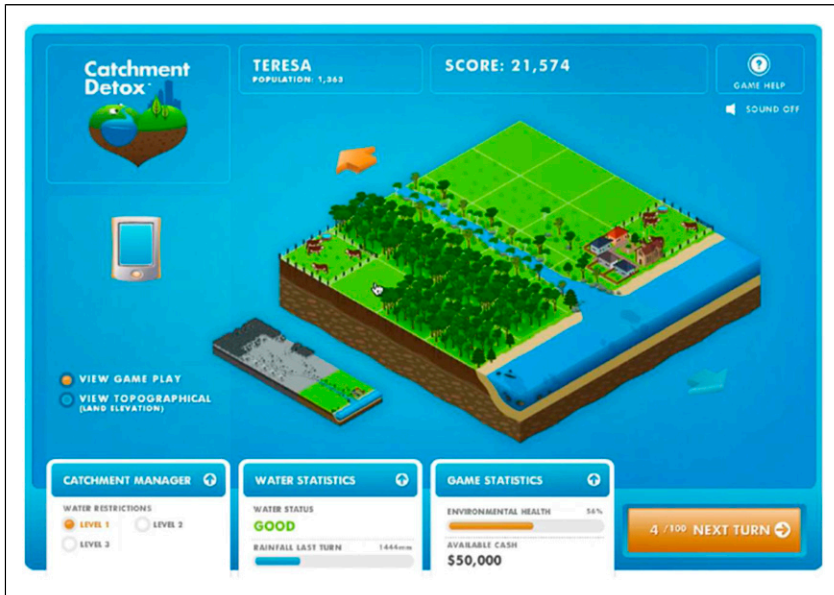
Figure 3. *Catchment Detox* (ABC, 2008).

either in relation to economy or environment, but the game mechanics together with the contextual information provided help the player discover the challenges behind not so easy to understand governmental policies and how these are also impacted by other countries' choices.

The second type of informative genre identified in the sample is the *newsgame as a news item*. In this case, this happens in three different forms: *newsgame as an amplification of another news item*, *newsgame as a photo gallery,* or *newsgame as a video gallery*.

Ten games from the sample were labeled as *amplification of news items*. These games are shorter than the rest of the sample and are linked or embedded in a news piece, and serve as a way to amplify the information by providing further insights, different perspectives or scientific or technological explanations. The topics covered by newsgames as amplification of news items in the sample are science and technology (e.g., 7 *Ways to defy death* (The Washington Post, 2015)), economics (e.g., *The trading game* (Bloomberg, 2015)), sports (e.g., *What makes a world cup winner?* (Telegraph, 2018)), and politics (e.g., *Order! Could you be Speaker?* (The Times, 2019)).

A relevant example of this category of newsgames is *Rock, paper, scissors* published by The New York Times in 2012 (see Figure 4). In the game, the player must play the traditional game rock, paper, scissors against the computer. It is possible to choose from two different playing modes: novice, in which the computer learns to play from scratch, and veteran, where the game uses over 200,000 rounds of previous experience against
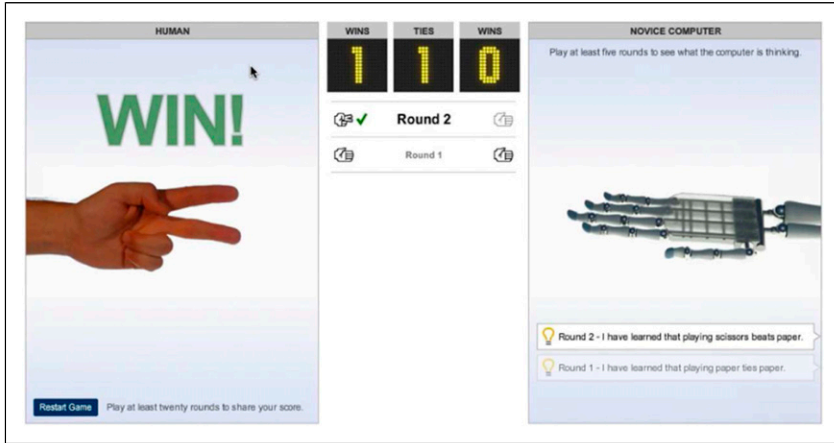
Figure 4. *Rock, paper, scissors* (The New York Times, 2012).

the player. After each round, the game would explain to the player what the computer learned about the result of the round. The game was designed to provide insights on how computers mimic human reasoning by building on simple rules and statistical averages to illustrate basic artificial intelligence. This game was linked to a broader coverage in the journal dedicated to artificial intelligence. This is therefore a relevant illustration of how newsgames can take the form of amplification of news items.

The Guardian's *Spot the ball* series is a relevant example of how newsgames can take the form of a journalistic *photo gallery*. Each of the 20 games of the series published between 2010 and 2011 shows a list of photos from relevant sport moments, such as the Lingerie Football League (see Figure 5), the tennis' Australian Open, the golf's Scottish Open, or crucial soccer games. In the game, the ball was removed from all pictures, inviting the player to guess where it was at that specific moment. This way the player is invited to explore the photo gallery in an innovative but also more reflexive way. The photo gallery comes accompanied with descriptions of each of the photos, in a similar way to traditional photo galleries.

Following a similar approach, The Times published *Could you be a cricket umpire?* in 2018 (see Figure 6). This game was classified in this study as a *newsgame video gallery*. The game includes a series of videos that replicate the training programme used by professional cricket umpires to provide insights about their sometimes-polemic decisions. For each of the videos the player should anticipate whether a batsman should be given out LBW (leg before wicket). Comments from a member of the Elite Panel of ICC are included in the game to provide clarifications to specific decisions. Similar to the case above, the player is invited to explore the video gallery in an innovative but also more reflexive way.

The newsgames associated with a more informational approach exhibit casual and basic game mechanics, which usually include a strategic element. The most common
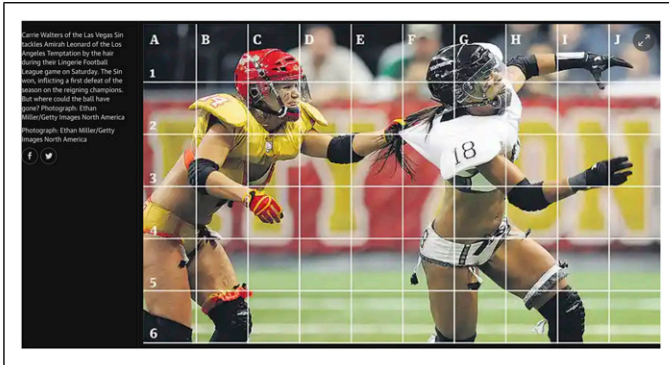
Figure 5. *Spot the ball* (The Guardian, 2011).

Figure 6. *Could you be a cricket umpire?* (The Times, 2018).

game genres used for this type of newsgames are strategy games (6/13), including real time strategy games (3), followed by simulation games (3). The main purpose of these games is usually to allow the exploration of an event in an immersive way (first person point of view), and experience the consequences of their own personal choices. This is an objective way to present an event to the player in an interactive and explorative format. In contrast, other games in this sample opt for the form of a trivia or puzzle game, as a way to offer the player to guess a possible causality in an objective way.

Figure 7. *Retoricum* (El Confidencial, 2016).
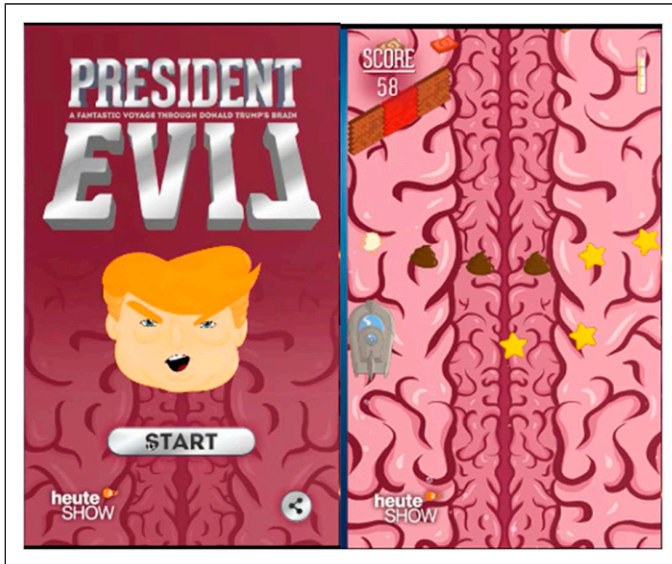
Figure 8. *President Evil* (ZDF, 2017).

Opinion Newsgames

In the sample, it was also possible to identify newsgames designed with the intention to convey an opinion message. Out of the 75 games analyzed, the 10 opinion newsgames in the sample were labeled as *editorial cartoons*. Editorial cartoons in the form of newsgames are interactive expressions of media editorial policies. All examples in the sample use humor and irony with the intention to make people reflect about current

events. Opinion newsgames in the sample cover the topics of politics (e.g., *Presidential Pong* (CNN, 2008)), national policies (*The Federator* (The Wall Street Journal, 2013)), climate change (e.g., *The long climate change denier* (The Guardian, 2016)) and the interpretation of historical events (e.g., *Fojba 2000* (Mladina, 2000)).

An example of an opinion newsgame in the form of an *editorial cartoon* is the game *Retoricum* (El Confidencial, 2016)*,* a trivia game in which the player has to identify the end of a sentence pronounced by the former Spanish president Mariano Rajoy (see Figure 7). During his presidency, Rajoy was assiduously criticized for his controversial phrases, which is also reflected in this editorial cartoon in the form of a newsgame. The game mechanics of this game only allow you to progress in the game if you choose the wrong answer, which is a caricature of his incoherent political progress.

Another relevant example is *President Evil*, published by the German television broadcaster ZDF in 2007 (see Figure 8). This game invites its players to cure former US president Donald Trump's "sick thoughts" and replace them with "good thoughts." "Sick thoughts" are represented in the game in the form of poop emojis, money, and brick walls, this last one clearly referring to Trump's controversial border wall between Mexico and The United States of America.

In both cases, opinion newsgames in the sample exhibit casual and basic game mechanics, which usually imitate the ones of well-known entertaining games such as *Pong* (Atari, 1972) in the case of *Presidential Pong* or *Galaxian* (Namco, 1979) in the case of *President Evi*l. This is because opinion games, similar to traditional editorial cartoons, are designed to convey a concrete and simple idea and to be consumed quickly. The basic and well-known game mechanics do not require the player to spend time mastering the game, and the focus is on the idea being conveyed.

Discussion and Conclusion

The goal of this study was to explore the way online mass media outlets use digital games to convey journalistic messages. We conducted this analysis from a grounded theory approach to avoid previous definitions of newsgames to limit our understanding of this phenomenon, as well as the selection of games included in the sample. The results of the analysis showed that media outlets use newsgames as journalistic content not only to convey informative messages but also interpretative and opinion discourses. This suggested that using the analytical lens of traditional journalistic genres was appropriate to be able to label a broader number of games as newsgames with a clearer argumentation. This approach allows to underline the peculiarities of newsgames in the field of digital journalism and led to proposing a more systematic identification and analytical approach for newsgames, discussed below (Table 2).

The most common type of newsgame in the sample was interpretive newsgame (38/ 75), being the *newsgame as interpretive reportage* (32) the most common genre used by media outlets. As researchers, this type was also the easiest to identify as a newsgame, as in all cases, the journalistic message to be conveyed is explicit in the game. The game genres more frequently selected for this type of newsgame, role-

playing and strategy, favor the articulation of complex journalistic messages in the game, which include a narrative supplemented by background and contextual information. When the game is efficiently designed, the player needs to go through the contextual information provided to progress in the game (e.g., *Climate Challenge* (BBC, 2006), *Food Import Folly* (The New York Times, 2007).

However, many of interpretative reportages analyzed take the form of a text-based role-playing game, in which in some cases there is an abuse of textual information (e.g., *Choose your own adventure: renting* (Vice, 2019)) or audiovisual content (e.g., *Pirate*

Table 2. Newsgames' Conceptualization and Traits from a Genre Point of View.

Genre	Definition	Traits
Interpretative. Explicit message		
Interpretative reportage	Games that convey sensitive and complex topics with in-depth treatment, and a strong point of view	- Sensitive and complex topics - In-depth treatment - Strong point of view (editorial perspective) - Background information
Chronicle	Games that display facts in a chronological order with a subjective point of view	- Strong point of view - Chronological order of presentation - Focused on a central character
Informative. Inductive message		
Objective reportage	Games that use facts and background information about an issue to induce the player to build their statements from its choices	- Fact-based games - Background information - Inductive construction of the information - More systematic approach (how systems work and are interrelated) - Show consequences of player actions
Amplification	Games embedded in a news item that amplify some aspects of the information	- Multimedia nature - Embedded in a news item - Short duration
Photo gallery	Interactive images that offer choices to explore the news environment	- Interactive photographs - Complete what happens in the picture (active audience) - Find the differences genre
Opinative. Basic and polarized point of view		
Editorial cartoon	Interactive editorials with tiny *backgrounds.* Humor and irony are used to convey the discourse acompassed with básica game mechanics	- Interactive editorial - Tiny background - Humor and irony discourses (no serious opinion) - Basic (and well-known) games mechanics

Fishing (Aljazeera, 2014)) and the agency of the player in the game is really limited. This type of newsgames does not require a complex, lengthy and costly game design, and are closer to the type of content that users of these media are familiarized with. Most of them, however, are not benefiting from the unique communicative potential of digital games.

As for the *informative newsgames* analyzed in this study, the ones taking the form of an *objective reportage* were not only the most common under this category, but also the easiest to classify, as in the line of interpretive reportages, the journalistic message is explicit in the game. A relevant contribution of this study was the identification of newsgames as news items in the form of *news amplification, photo gallery* and *video gallery*. These three types of newsgames are in line with Burtons' claim that newsgames are appropriate to provide "deeper context and understanding about the underlying issues involved in an issue or to explain the workings of processes or systems" (Burton, 2005, p.96). Burton's claim, however, is linked to the idea that newsgames should be complex systems in the form of, for example, role-playing games, that take the shape of a reportage, and are not appropriate to cover breaking news because of the time involved in the development of that type of games. Our study, however, shows that other types of game genres, such as (real time) strategy games, trivia, or simple simulations are used with the purposes of complementing or contextualizing informative news, and are suited to respond to the time pressure that accompanies this type of journalistic pieces.

A relevant part of the results of this study was the identification of one part of the sample as *opinion newsgames*. Although early academic discussions about newsgames were focused on their capacity to convey a political opinion (Frasca, 2003; Bogost, 2007; Bogost, Ferrari, & Schweizer, 2010) and the intention of their designers to participate in the public debate (Sicart, 2008), most recent studies on newsgames seem to be selecting their samples based on the informative and interpretive nature of the units of analysis (e.g., Plewe & Fürisch, 2017). Opinion newsgames, therefore, seem to be getting less attention or in some cases not even being considered newsgames if following the definitions provided.

As researchers, we experienced that some *opinion newsgames* and *informative newsgames* could be easily overlooked and not classified under the category of newsgames as usually there is no clear or explicit message in the game itself. If instead of following a grounded theory approach, this study would have used a more restrictive list of sampling criteria guided by recent definitions of newsgames, many of the games analyzed would not have met the sample. During the final stages of the analysis, it became clear that the lens of journalistic genres applied in the selective sampling process helps to clearly identify the journalistic value of a broader sample of newsgames. When compared to traditional editorial cartoons published in printed press, for example, it is easy to identify how opinion newsgames are focused on expressing an identifiable point-of-view or opinion. Similarly, when compared to photo or video galleries, some games not so clearly identified as newsgames, become a more explicit journalistic content.

The analytical approach proposed for this study comprends an inclusive but also systematic way to identify and classify newsgames. The main contribution of this study

is therefore approaching the understanding of newsgames not as an independent journalistic genre that needs to be defined and limited, but as a type of journalistic content comparable to, for example, a video or an audio content or an infographic. Following this approach, we claim that the definition proposed by Bogost and colleagues who define newsgames as "a broad body of work produced at the intersection of videogames and journalism" (Bogost, Ferrari & Schweizer, 2010: 6), is the most appropriate one for this phenomenon, although, we perceive their original newsgames categorization (tabloid, editorial, etc.) needs to be updated under the light of this research. This definition, however, is proposed within the framework of procedural rhetoric (Bogost, 2007) under the idea that procedurality is central to newsgames. This is in line with more current definitions of this phenomenon, that, for example, disregard the journalistic value of newsgames' narratives (Wolf & Godulla, 2018). We move away from this perspective since in most of the games analyzed in this study the game narrative is holding a relevant part of the journalistic message, as well as it is possible to identify other relevant *persuasive dimensions* of digital games (de la Hera, 2019) in these games such as visual persuasion or haptic persuasion. We do not make any claims about the effectiveness of centralizing the journalistic message in the narrative of the game or other persuasive dimensions, as that is beyond the purposes of this study, but the present analysis reflects the way media outlets are making use of digital games to convey journalistic messages.

Furthermore, our understanding of newsgames as a journalistic content rather than a journalistic genre, and the suggested analytical approach of using traditional journalistic genres to identify and classify them, provides a way out of Grace's (2020) claim that the definition of newsgames needs to be continuously negotiated due to the constant evolution of this phenomenon. This study has also shown that traditional game genres are sufficient to classify all the newsgames included in the sample. During the selective analysis process, we were open to propose or identify new journalistic genres in the newsgames analyzed, but in all cases traditional genres proved to be a good classification tool for our sample. We should not disregard, however, the fact that the sample was composed only by newsgames published in mass media outlets, and that this could have impacted the way these newsgames took shape. It should be taken into consideration, therefore, that other genres might be visible in newsgames published out of this context; this still does not invalid the approach proposed in this study. It would be relevant, therefore, to conduct a follow-up study in which newsgames published outside the context of mass media outlets and/or in other languages, are analyzed using the same approach of this study.

Another limitation of this study is that it is only focused on the different journalistic genres identified in the sample, and their connection with specific topics and game genres. This study does not enter into analyzing how these newsgames are experienced or valued by users and how effective they are. Furthermore, no insightful analysis of the communication or persuasive strategies used in these games have been conducted. Therefore, this would be a relevant next step to the present study, which would complement the understanding of this phenomenon.

Appendix 1

List of Games Analyzed

Game Title	Year	Medium	Country
Fojba2000	2000	*Mladina*	Slovenia
Can you spot the threats?	2001	*MMSNBC.com*	US
Climate challenge	2006	*BBC*	UK
MonteLab	2007	*RTVE Lab*	Spain
Points of entry: An immigration challenge	2007	*New York Times*	US
Food import folly	2007	*New York Times*	US
Catchment detox	2008	Moon communications Group, Australian Broadcasting corporation	Australia
Presidential pong	2008	*CNN*	US
Tortura Electoral	2008	*MSN.com*	Spain
Journey to the end of coal	2008	*Le Monde & Honkytonk Films*	France
The big issue	2009	*France 5 y Honkytonk Films*	France
Cutthroat capitalism	2009	*Wired*	US
Spot the ball (series)	2010	*The Guardian*	UK
Charlie Sheen v Muammar Gaddafi: Whose line is it anyway?	2011	*The Guardian*	UK
Could you be a medallist?	2012	*The Guardian*	UK
Tu huella ambiental	2012	*El Comercio*	Ecuador
Just one more game	2012	*New York Times*	US
Rock, paper, scissors	2012	*New York Times*	US
Tallanasty (Ethics Game)	2013	*Miami Herald*	US
HeartSaver	2013	*ProPublica*	US
The federator	2013	*The Wall Street Journal*	US
Rebuilding Haiti	2014	*Rue 89*	France
Spot the ball	2014	*New York Times*	US
Pirate fishing	2014	*Aljazeera*	Catar
The refugee challenge	2014	*The Guardian*	UK
The Wafler	2014	*Digital First Media*	US
7 ways to defy death	2015	*The Washington Post*	US
This game will show you	2015	*Quartz*	US
The trading Game	2015	*Bloomberg*	US
Syrian journey: Choose your own escape	2015	*BBC News*	UK
Two billion miles	2015	*Channel 4/ITN*	UK

(continued)

Game Title	Year	Medium	Country
Can you navigate a day with depression?	2015	*BuzzFeed News*	US
Predict the president	2016	*BBC*	UK
Commuter Challengue	2016	*Wamu 88.5* et al.	Brasil
#Hacked	2016	*Aljazeera*	Catar
A world without chocolate	2016	*Aljazeera*	Catar
Retoricum	2016	*El Confidencial*	Spain
Stairway to (tax) heaven	2016	*El Confidencial*	Spain
Detrás del Paraíso	2016	*Eldiario.es*	Spain
Parkinson, que tiemble el camino	2016	*Lab de RTVE*	Spain
Can you beat Usain Bolt?	2016	*The New York Times*	US
How to survive a nuclear bomb	2016	*BBC Taster*	UK
The Lone climate changer Denier	2016	*The Guardian*	UK
President evil	2017	*ZDF (Heute Show)*	Germany
¿Cómo cambió el rumbo de la economía de CFH a Macri?	2017	*Página 12*	Argentina
I am your man (boxing)	2017	SBS (special broadcasting service)	Australia
Brexit bus	2017	*Advisa.se*	Sweden
Payback	2017	Next Gen Personal Finance	US
Uber games	2017	*The Financial Times*	US
College scholarship tycoon	2017	*Vox*	US
El bueno, el malo y el tesorero	2017	*El Confidencial*	Spain
The Game of oil	2017	YLE	Finland
Bury me, my love	2017	*Arte.tv*	France
You draw it: what got better or worse during Obama's presidency	2017	*The New York Times*	US
Play our game… wheelchair user	2017	*BuzzFeed News*	UK
Dans la peau d´un borugmestre	2018	*Lavenir.net*	Belgium
American mall Game	2018	*Bloomberg*	US
Pick your own Brexit	2018	*Bloomberg*	US
You are Jeff Bezos, where should HQ2 go?	2018	*GateHouse Media*	US
The waiting Game	2018	*ProPublica*	US
Think military strikes could stop North Korea? Try it and see	2018	*The New York Times*	US
The Betsy Devos BoardGame	2018	*The Washington Post*	US
¿Crees que eres un buen conductor?	2018	*El Confidencial*	Spain
Bad news	2018	*DROG*	Netherlands

(continued)

Game Title	Year	Medium	Country
Coding like a girl	2018	*Aljazeera*	Qatar
Game of $urvival	2018	*The Straits Times*	Singapur
I reporter	2018	*BBC*	UK
What makes a world cup winner?	2018	*Telegraph*	UK
Could you be a cricket umpire?	2018	*The Times*	UK
Poverty Game	2019	*RTL Nieus*	Netherlands
Could you be a speaker	2019	*The Times*	UK
Choose your own adventure: Renting	2019	*Vice*	UK
Dodging Trump´s tariffs	2019	*Financial Times*	US
The Amazon race	2019	*Abc.net.au*	Australia
The Ocean Game	2019	*Los Angeles Times*	US

Appendix 2

Journalism Genres

Informative	Interpretative	Opinative
News article	Profile	Editorial
Reportage	Interpretative reportage	Column
Interview	Interpretative interview	Review
		Cartoon
		Letters to the editor

Appendix 3

Games Genres. Wolf (2005)

Abstract, Adaptation, Adventure Life, Board Games, Capturing, Card Games, Catching, Chase, Collecting, Combat, Demo, Diagnostic, Dodging, Driving, Educational, Escape, Fighting, Flying, Gambling, Interactive Movie, Management Simulation, Maze, Obstacle Course, Pencil-and-Paper Games, Pinball, Platform, Programming Games, Puzzle, Quiz, Racing, Rhythm and Dance, Role-Playing, Shooting, Simulation, Sports, Strategy, Table-Top Games, Target, Text Adventures, Training Simulation, and Utility.

Appendix 4

Code Tree

Selective Codes	Axial Codes	Examples of Open Codes
Interpretive newsgames	Newsgames as interpretive reportage	Policies
		Labor Conditions
		Corruption
		Role playing game
		Strategy game
	Newsgames as chronicle	Social inequalities
		Migration
		Sport
		Text-based role playing game
Informative newsgames	Newsgames as objective reportage	Climate change
		Politics
		Policies
		Simulation
		Strategy game
	Newsgames as news amplification	Economics
		Science and technology
		Shooter game
		Real time strategy game
	Newsgames as photo gallery	Sports
		Puzzle game
	Newsgames as video gallery	Sports
		Simulation
Opinion newsgames	Newsgames as editorial cartoons	History/war
		Politics
		Society
		Real time strategy game
		Trivia
		Board game

face of media fragmentation: disintermediation, engagement, and polarization" financed by the Spanish Ministry of Science and Innovation (PID2020-114193RB-I00).

ORCID iDs

Salvador Gómez-García   https://orcid.org/0000-0001-5126-6464
Teresa de la Hera Conde-Pumpido   https://orcid.org/0000-0002-5102-813X

References

Arafat, R. K. (2020). Rethinking framing and news values in gamified journalistic contexts: A comparative case study of Al Jazeera's interactive games. *Convergence*, *26*(3), 550–571. https://doi.org/10.1177/1354856520918085

Bogost, I. (2007). *Persuasive games: The expressive power of videogames*. MIT Press.

Bogost, I., Ferrari, S., & Schweizer, B. (2010). *Newsgames: Journalism at play*. MIT Press. https://doi.org/10.7551/mitpress/8854.003.0010

Burton, J. (2005). News-game journalism: History, current use and possible futures. *Australian Journal of Emerging Technologies and Society*, *3*(2), 87–99.

de la Hera, T. (2019). *Digital gaming and the advertising landscape*. Amsterdam University Press.

Dowling, D. O. (2021). *The gamification of digital journalism. Innovation in Journalistic Storytelling*. Routledge.

Ferrer-Conill, R., & Karlsson, M. (2016). The gamification of journalism. In H. Gangadharbatla, & D. Z. Davis (Eds), *Emerging research and trends in Gamification* (pp. 356–383). IGI Global.

Foxman, M. (2015). *Play the news: Fun and games in digital journalism*. Tow Center for Digital Journalism.

Frasca, G. (2003). *September 12th*. [Online Game].

García-Ortega, A., & García-Avilés, J. A. (2020). When journalism and games intersect: Examining news quality, design and mechanics of political newsgames. *Convergence*, *26*(3), 517–536. https://doi.org/10.1177/1354856520918081

Glaser, B. G., & Strauss, A. L. (1967). *Grounded theory. The discovery of grounded theory*. Aldine.

Gómez-García, S., Paz-Rebollo, M., & Cabeza-San-Deogracias, J. (2021). Newsgames against hate speech in the refugee crisis. *Comunicar*, *29*(67), 123–133. https://doi.org/10.3916/C67-2021-10

Grace, L. D. (2018). Newsjam: Making games at the pace of news. In: *ACM International Conference Proceeding Series* (pp. 17–20). https://doi.org/10.1145/3196697.3196702

Grace, L. (2020). *Doing things with games. Social impact through play*. CRC Press.

Grace, L., Treanor, M., Totten, C., & McCoy, J. (2016). A case study in newsgame creation: Why game designers and journalists are still learning to work together. In *International Communication Conference 2016*, Fukuoaka, Japan, June 9-13

Gray, D.E. (2004). *Doing research in the real world*. Sage Publications.

Lin, J. H. T., & Wu, D. Y. (2020). Newsgames for the greater Good: The effects of graphic realism and geographic proximity on knowledge acquisition and willingness to help. *Journalism and Mass Communication Quarterly*, *97*(1), 30–51. https://doi.org/10.1177/1077699018820315

Lopezosa, C., Codina, L., Fernández-Planells, A., & Freixa, P. (2021). Journalistic innovation: How new formats of digital journalism are perceived in the academic literature. *Journalism*. https://doi.org/10.1177/14648849211033434

Mast, J., Coesemans, R., & Temmerman, M. (2017). Hybridity and the news: Blending genres and interaction patterns in new forms of journalism. *Journalism*, *18*(1), 3–10. https://doi.org/10.1177/1464884916657520

Melo, J. M., & de Assis, F. (2016). Gêneros e formatos jornalísticos: Um modelo classificatório. *Intercom: Revista Brasileira de Ciências da Comunicação*, *39*(1), 39–56. https://doi.org/10.1590/1809-5844201613

Newsgaming.com (2003). September 12th, A toy world. http://newsgaming.com/press092903.htm

Plewe, C., & Fürsich, E. (2017). Are newsgames better journalism? *Journalism Studies*, *19*, 2470–2487. https://doi.org/10.1080/1461670X.2017.1351884

Rojas-Torrijos, J. L. (2020). Gamification of sports media coverage: An infotainment Ok, sit e approach to Olympics and Football World Cups. *Communication and Society*, *33*(1), 29–44. https://doi.org/10.15581/003.33.1.29-44

Schulzke, M. (2016). War by other means: Mobile gaming and the 2014 Israel-Gaza conflict. *Review of International Studies*, *42*(3), 575–596. https://doi.org/10.1017/S0260210515000510

Sicart, M. (2008). Newsgames: Theory and design. In S.M. Stevens, & S.J. Saldamarco (Eds), *Entertainment Computing - ICEC 2008. ICEC 2008. Lecture Notes in Computer Science* (vol 5309). Berlin, Heidelberg: Springer. https://doi.org/10.1007/978-3-540-89222-9_4

Siitonen, M., Uotila, P., Uskali, T., Varsaluoma, J., & Välisalo, T. (2019). A pilot study on developing newsgames in collaboration between journalism and computer science students. *Nordicom Review*, *40*(2), 143–155. https://doi.org/10.2478/nor-2019-0038

Silverman, D. (2011). Credible qualitative research. In *Interpreting Qualitative Data* (pp. 271–314). Sage Publications.

Strauss, A. L., & Corbin, J. M. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Sage Publications.

Treanor, M., & Mateas, M. (2009). Newsgames: Procedural rhetoric meets political cartoons. In: *Proceedings of the 2009 DiGRA International Conference: Breaking new ground: Innovation in games, play, practice and theory*.

Usher, N. (2014). *Making news at the New York times*. University of Michigan Press.

Vobič, I., Dvoršak, L., & Vtič, M. (2014). Digital games and journalism: A case-study of Slovenian political weekly'S. *Teorija in Pranks*, *51*(1), 123–142.

Wolf, M. J. P. (2005). Genre and the video game. In J. Raessens, & J. Goldstein (Eds), *Handbook of computer game studies* (pp. 193–204). MIT Press.

Wolf, C., & Godulla, A. (2018). Newsgames in journalism. *Journalism Research*, *1*, 1–20.

Author Biographies

Salvador Gómez García is an associate professor at the Department of History and Communication, University of Valladolid (Spain). He holds a BA in Journalism, MA in Documentary Realization and Screenwriting, and international PhD in Media History at Complutense University (2008). His field of study explores how the new narrative formulas have been incorporated into the traditional mass media or, in other cases, how new media have emerged. His specialization in this area of study focuses on the informative power of serious games and the mobile ecosystem in the political and informational spheres. He is also PI of the funded research project "Politainment in the face of media fragmentation: disintermediation, engagement, and polarization" financed by the Spanish Ministry of Science and Innovation (2021–2023). He has been visiting scholar in universities of England, the Netherlands, Denmark, France, Ecuador, and Chile.

Teresa de la Hera is Assistant Professor of Persuasive Gaming at the Department of Media and Communication, Erasmus University Rotterdam (The Netherlands). Her expertise is related to understanding how digital games and new media technologies can be used as media for communication and tools for engagement, motivation, and persuasion. She conducts research at the Erasmus Research Centre for Media, Communication and Culture where she is member of the Research Cluster Gaming Matters. De la Hera is author of the book *Digital Gaming and* the *Advertising Landscape* (2019) and editor of the volume *Persuasive Gaming in Context* (2021), both published by Amsterdam University Press. She is also PI of the funded research projects "Digital Literacy Games: Digital games designed to support digital literacy skills acquisition" and "Ice-skating game to foster intercultural interaction." Before joining Erasmus University in 2017, she was a Post-doctoral Researcher and Lecturer at the Department of Media and Culture Studies at Utrecht University. As a Post-doctoral researcher, she was a member of the NWO funded research project "Persuasive Gaming in Context" in which she explored the potential of digital games as media for persuasion. Teresa started her academic career at the University of Santiago de Compostela, Spain in 2006. In 2010 she was a visiting PhD Candidate at the University of Amsterdam. Later on, in 2011, she moved to the Netherlands where she obtained an International PhD Fellowship to finish her PhD "Persuasive Structures in Advergames" at Utrecht University. Her thesis has been awarded as the Best Academic Work in the Field of Media Studies by the Consell de l'Audiovisual de Catalunya (Spain) in 2013. She holds a BA in Journalism (track: Digital Journalism), a BA in Audiovisual Communication (track: Direction and Screenplay), and an MA in Communication and Advertising.