Techno-aesthetic Narratives in Digital Journalism: The Case of Newsgames[*]

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The structural connection between gamification processes and the dissemination of information in online environments created by the affordances of digital media has led to the rise of newsgames in journalism. These are computerized games intended to illustrate a specific, concrete news item to a participatory, interactive audience. This development has sparked discussion, with some believing that it is harmful to treat serious news using methods typical of entertainment, and others calling attention to the expressive and learning opportunities that derive from applying videogames to journalistic reporting on reality. In this article, I argue that the debate on gamification processes in news information can be enriched by considering the narratives conveyed by newsgames as "techno-aesthetic narratives." The concept of techno-aesthetics, developed by Gilbert Simondon, refers to the extension of human sensibility into technological artifacts that prolong its faculties, allowing them to enter into relationship with a wider social and cultural reality, thanks to the technological extension. The techno-aesthetic paradigm has been investigated in many fields, from literature to the visual arts, including forms of communication mediated by digital devices, but it has never been applied thus far to news narratives. Through an analysis of the work of Pietro Montani, who has modernized thought on techno-aesthetics by updating it to include digital media, I show that the essential traits of this paradigm can also be applied to journalistic narratives conveyed by newsgames. More specifically, I focus on the following four characteristics of the techno-aesthetic paradigm: 1. The interactive imagination; 2. The conception of gamification as a tool for reflecting on reality; 3. The transformation of users' experience and schemas through the techno-aesthetic experience; 4. The role of the "performance of sensibility" in this transformation of subjectivity. In tracing out the connection between these four characteristics and newsgames, I examine both major studies on the narratives conveyed by these journalistic productions and two case studies: The Refugee Challenge, produced by the British newspaper *The Guardian*; and Rebuilding Haiti, created by the European Journalism Centre. I then explain why I believe it would be useful to extend the techno-aesthetic paradigm to journalistic narratives, which have not yet been considered from this angle. First of all, they can prompt reflection on the role of digital journalism in the implementation of a "techno-aesthetic education" as envisaged by Montani (2015). Furthermore, discussing techno-aesthetic narratives can help shed light on some of the informational and ethical potential of a journalism that conveys news to its audience through "ludic" methods, thereby furthering reflection on the link between journalistic information and gamification processes. Techno-aesthetic narratives also find a place in studies on the changing concept of objectivity in digital journalism, such as Michael Schudson's notion of an "objectivity of empathy" (2018). I conclude by setting out the potential risks, especially the ideological ones, inherent in techno-aesthetic narratives conveyed by newsgames and suggest types of studies that will be needed in the future to evaluate the real impact of these narratives.

Keywords: techno-aesthetics, newsgames, gamification, journalism, narratives

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The rise of the Internet and gradual shift of information into digital media have reshaped journalistic narratives. By that, I mean the way in which accounts of reality are conveyed to audiences by information producers. The affordances that guide the uses of digital platforms promote mechanisms of collective information production and consumption that differ from those in the past. Gamification appears as a feature of new technologies that is capable of shaping both users' consumption of information and the methods through which information is conveyed by those who produce it.

Gamification has been defined as the application of game design principles in contexts that are non-ludic contexts per se (Robson et al, 2015), and it is to some extent intrinsic to the structure of social media and to the communication conveyed on these platforms. The continual competition for likes, retweets, and more followers generates a system of incentives and rewards that is similar to that of videogames (Stuart, 2013). Other definitions of gamification focus more on the process of enhancing services with motivational affordances in order to create gameful experiences and elicit behavioral outcomes (Houtari and Hamari, 2012). A key element of gamification is the capability of boosting user engagement by using game design principles and mechanisms. This is another reason why gamification has been widely used in marketing, aimed at "massive gains in customer and employee engagement through the use of game design" (Deterding, 2016: 104-105). A literature review of 24 peer-reviewed studies has shown that in both marketing and learning applications gamification has yielded positive effects, while also vitalizing engagement and incentives for both consumers and users (Hamari et al, 2014). Even news information, which is increasingly produced and consumed on social media platforms, has been swallowed up by the gamification process: the language used by news outlets on social media, for example, also tends toward a ludic style of communication, by means of emoticons and colloquial expressions (Scarfone, 2017). Media outlets also adopt these strategies in order to adapt to the communicative codes of social media platforms and increase their number of page views. In journalism, however, the used of gamification mechanisms may sometimes lead to distorsions: sensationalism, for example, may result from the use of communicative codes marked by irony and an "emotional" communication of the news whose primary aim is to entertain rather than inform (Uribe and Gunter, 2007). In the gamified context of social media, these communicative strategies do indeed have a strong hold on the audience, thereby multiplying clicks and, consequently, revenue (Van Dijck et al, 2018).

Newsgames

The situation described above has put pressure on both traditional news outlets and the new actors of information to seek out digital storytelling forms capable of attracting their audiences (Sturm, 2013), by leveraging the structural connection between gamification and the dissemination of news in online environments. As a natural consequence, forms of

storytelling connected with the rise of computer games have also carved out a space (Zehle, 2012).

Newsgames have thus become an established figure in the information market. By newsgames, I mean "a broad body of work produced at the intersection of videogames and journalism" (Bogost et al., 2010, 6). Newsgames apply the logic of "serious games" to journalism. Serious games refer to videogames that go beyond entertainment, created to combine, on the one hand, learning strategies and, on the other, the interactive, multimedia features of the media (Casagrande, 2018). Sicart (2009) defines newsgames as serious computer games whose aim is to illustrate a specific, concrete news item to a participatory public. Although there is no single definition of this type of journalistic production, in this article I will refer to the description of newsgames provided by Plewe and Fürsich (2018, p. 2472). According to the two authors, newsgames 1. are created in response to actual events, since they "all refer to actual events, current or past, with most of these events standing in the context of bigger social, historical or political issues"; 2. they are able to "provide contextual information in the way journalistic documentaries or features could"; 3. they are supplementary to traditional news, since they "should not (yet) be understood as independent means of reporting the news, but rather as valuable interactive supplement to already-existing information."

Clearly, the idea of bringing journalistic narratives of this kind to life has raised numerous concerns in journalism studies. Some authors have raised doubts about the appropriateness of covering serious news in formats typical of entertainment, fearing that issues of public interest could be trivialized and made banal (Ferrer Conill, 2016; Lange, 2017). In recent years, however, other studies have highlighted the positive potential of newsgames and the more general application of videogames and virtual reality to journalistic reporting methods (Havens & Lotz, 2017; Dowling, 2021).

As I argue going forward, the debate on the gamification of news reporting can benefit from considering the journalistic narratives conveyed through newsgames as "techno-aesthetic narratives." To explain my hypothesis, I first define the concept of techno-aesthetics, setting out its essential characteristics. I then spell out how the characteristics of the techno-aesthetic paradigm can be applied to the journalistic narratives conveyed by some kinds of newsgames. To do so, I examine two newsgame case studies: The Refugee Challenge, created by the British newspaper *The Guardian* (2014, available at: https://www.theguardian.com/global-development/ng-interactive/2014/jan/refugee-choices-interactive); and Rebuilding Haiti, created by the European Journalism Centre (2010, available at: http://apps.rue89.com/haiti/en/).

To conclude, I explain why framing some journalistic narratives as techno-aesthetic can enrich discussion on gamification processes in digital journalism. I finish by suggesting research questions that may arise from defining this type of narrative.

Techno-Aesthetics

The concept of techno-aesthetics was developed in philosophical thought to investigate the relationship between sensible experience and the technological tools in which it is

externalized. Gilbert Simondon was the French philosopher who systematized a true philosophy of techno-aesthetics. In *On the Mode of Existence of Technical Objects* (1958) and later, in his short 1982 text *On Techno-Aesthetics*, Simondon develops an aesthetic conception of the medium as a sensory environment. He describes this environment as a "milieu associé," in which sensory experience changes form and enters into a relationship with a wider social and cultural reality, precisely by virtue of its technical extension.

As Montani writes (2015: 72), for Simondon "human sensibility, its aesthesis [...] is endowed with a 'natural' propensity to extend itself into technological artifacts that *homo sapiens* has used as prostheses since it first appeared". Thus, any reference to the notion of techno-aesthetics first demands a reflection on the tools that act as "median elements" between individuals and their perception of external reality. However, techno-aesthetic thinking proper only occurs when the media are not qualified as mere intermediaries but also as "extensions" of the human sense faculties, allowing them to fit into a wider socio-technical environment.

This is an obvious allusion to Marshall McLuhan's theory of media (1964) as "extensions" of the human sensory organs. For McLuhan, too, this extension has the effect of introducing human sensory organs into an "environment" in which sensory perception and technology are intertwined.

The Four Essential Characteristics of Techno-Aesthetics

The authors just mentioned, Simondon in particular, are the main theoretical references for thought on techno-aesthetics as it developed mainly starting in the 1960s. Between 2007 and 2014, the Italian philosopher Pietro Montani modernized this body of work by adapting it to developments in digital technologies (Montani, 2007; 2010; 2014).

Montani's theory provides a starting point for identifying four key aspects of techno-aesthetics that are compatible with contemporary studies on the use of newsgames for journalistic storytelling.

Interactive imagination

The first characteristic of techno-aesthetics concerns the kind of imagination that is ignited by the externalization of sensibility in contemporary techniques and technologies. As Montani explains, this is an "interactive imagination." The interactive imagination is not totally free: it is "guided" by the technological environment in which it is externalized (Montani, 2014: 12). When interacting with this environment, the imagination does not perform as an act of consciousness decoupled from its material reality. Montani clarifies this idea with the following example:

> An oleander branch is flexible. But the fact that one can also imagine that there is the accumulation and discharge of a force in this flexibility results from a hypothetical inspection [...] that has the capability of discerning another law in it. The important point here is that this hypothetical inspection has an obvious technological and interactive character. In other words, the framing of the oleander branch that focuses on

its potential to be transformed into an arch is a product of what I define as 'interactive imagination' (Montani, 2014: 34)

This example elucidates three aspects: first, the imagination is influenced by the technological components in which it is externalized. Instead of representing a limit for the imagination, however, it increases its creative ability, which nevertheless remains anchored to the act of modifying the environment that guides it. Lastly, the oleander branch's flexibility is understood by Montani as "supervenient": as an unpredictable, contingent aspect. The only way the individual can apprehend this aspect is through interaction with an environment, which, as a rule, resists. Precisely because of this, however, it stimulates the individual to perform an act of creativity, such as constructing an arch from the branch's flexibility (Montani, 2014: 51).

From the techno-aesthetic perspective, in its application to digital technologies, it is therefore essential to maintain a form of mutual implication between human subjectivity and the technological environment with which it interacts, without this relationship being dominated by one or the other. When this happens, when humans carry technological delegation too far, the technological environment loses its material, contingent, supervenient qualities, and the relationship of the human body with that same environment becomes entirely self-referential. In this way the aesthetic becomes an-aesthetic, and the sensible faculties become atrophied. For Montani, this sort of excessive technological delegation can be found specifically in some digital technologies, particularly in the often repetitive and standardized protocols of social media networks or in dating applications. In these examples the user experience becomes self-referential. The digital environment loses its unpredictability and tends to "keep active those segments of sensibility that can be channeled to particular objects (as in the case of some videogames [...])" (Montani, 2014: 44). Hence, the interactive character of the imagination is also lost.

In the techno-aesthetic paradigm, the interactive property of digital technologies (including videogames) and their potential as learning tools are not understood as exclusively "internal" to these technologies. In other words, even in virtual experiences the mutual implication between subjectivity and its associated environment is best accomplished by maintaining a "reference to the outside world," thereby preventing "referential indistinguishability," which can lead to the "the real world being replaced by the virtual world set up by the Web" (Montani, 2014: 37). When seen from this perspective, an absence of interactivity thus means an absence of reality. Indeed, in a dialectic between virtual and real that is always active, virtual experiences must refer to somewhere "outside" the virtual world, to a concrete, material referent. Whenever this does not happen, the techno-aesthetic experience becomes an-aesthetic and self-referential.

Gamification as a Tool for Reflecting on Reality

The reference to videogames is essential for clarifying the link between the techno-aesthetic paradigm and newsgames. As we have seen, there is an an-aesthetic dimension to

gamification: it occurs when simulated environments such as those in videogames generate a totally self-referential experience, for mere ludic entertainment.

The starting point for a truly interactive and techno-aesthetic ludic experience must therefore be the idea that digital gamification is not necessarily mere evasion from reality but, rather, a means for enriching one's knowledge of the world. As Montani himself observes, although the interactive imagination does not have an exclusively ludic character, it can still apply to those who indulge themselves in a "playful, dynamic experience of space," thereby increasing "a vibrant and festive feeling of spatiality" (Montani, 2014: 91:92). From this perspective, videogames can also be reconceived as learning tools since they are media "capable of transforming even abstract notions into directly observable and manipulable perceptual-motor experiences: in a word, into essentially interactive experiences" (Montani, 2014: 14). Thus, gamification in general and videogames in particular can be fully inscribed in the techno-aesthetic paradigm, where they are transformed from forms of evasion and construction of an artificial, optimized reality, designed solely to satisfy the individual's self-referentiality, into environments with which users must interact and from which they can learn something about reality.

The Transformation of Users' Experience and Schemas

The techno-aesthetic experience described by Montani is one in which the associated milieu—precisely because of its unfamiliarity—reorients the subjects' learning acts, prompting them to reflect on what they are experiencing. The associated milieu, an extension of our sensibility, is in a certain sense a "disturbing" environment, but this unfamiliarity is precisely what triggers a real transformation of subjectivity (Montani, 2014: 47).

To clarify this point, Montani refers to Wolfgang Iser's reader-oriented theory (1976), which treats the reading of a text as an act that reorganizes and restructures the reader's memory and cognitive schemas. As in the techno-aesthetic paradigm, reading thus makes it possible to re-orient acts of learning and transform the subject. It is the unfamiliarity, the resistance that the text opposes to the reader's usual schemas of understanding, that sets in motion this process of restructuring subjectivity in the act of reading.

When the reality loses its "supervenient" elements, and the experience is reduced to standardized protocols, this transformation of the experiences and schemas of subjectivity does not take place. This is what happens in digital technologies, for example, when it is simply a matter of establishing "a new record to post on the list of videogame scores" (Montani, 2014: 45). In the virtual context of videogames, too, the experience is properly techno-aesthetic only when it refers to an external, material, concrete reality. This means that the associated environment cannot be programmed or calculated – not simply because of its intrinsic characteristics, but also because it refers to a dimension beyond the merely virtual. This aspect also emerges from Montani's attention to augmented reality: unlike virtual reality, "[augmented reality] is not an immersive artificial environment that encompasses our perceptions and actions; it is the ontologically inclusive real world that comes toward us, providing us with […] a variety of information that can guide our actions

in various ways" (Montani, 2014: 83). Thus, through augmented reality devices we are able to meet together "in Zuccotti Park or Piazza Tahir, along with many other people who […] live there, and together we can reclaim those places and what happens in them" (Montani, 2014: 82). When this mutual implication between the virtual and the real fails to manifest, so does the transformation of experience and the schemas of subjectivity.

The Performances of Sensibility

The transformation of subjectivity resulting from the unfamiliarity of the associated milieu can only occur when the user is called upon to perform an action. This is a "performative transformation in the reorganization of the previous gestalts" (Montani, 2014: 77). In other words, interactivity only occurs when the act of immersion in the associated milieu, which constitutes a technological extension of the sensible faculties, involves a modification of that milieu. Hence, techno-aesthetics is a paradigm that concerns specifically the performance of *aisthesis*.

On the other hand, in the protocols of many optimized social network and digital technologies, the performance of sensibility is only apparent, because everything is reduced to "a simplified experience (developed to the bare minimum) or to […] a potential show," in which there is a "draining of the emotional and cognitive processes that differentiate the perception of sensation, […] complexity, and uncertainty from simplification and from the guaranteed default results" (Montani, 2014: 48). If sensation is connected with performance, then perception is connected with passivity, with the nature of a show that is merely consumed.

The Techno-Aesthetic Narratives of Newsgames

To show the similarities between newsgames and these four characteristics of the techno-aesthetic paradigm, I will refer to the most important studies in recent years on the narratives that newsgames convey. I will also offer two case studies of newsgames, called The Refuge Challenge and Rebuilding Haiti.

The Refugee Challenge is an interactive game developed by the British newspaper *The Guardian*. The gamer takes the role of Sunni, a 28-year-old Syrian woman who has lost her husband during the civil war and is seeking a better life for herself and her children. She has decided to leave Syria to try to reach a safer country. During the trip, players are called upon to make choices between different routes and completely immerses themselves in the refugee's circumstances, experiencing all the hardships (and tragic aspects) of her plight.

The Refugee Challenge is not a videogame in the conventional sense; it falls rather under the "game book" category. The user is presented with a narrative composed of text fragments. Each fragment introduces a part of the story and invites the gamer to make a choice, which develops the narrative in one direction or another. Each text is accompanied by a photograph that graphically represents the events described, a map that shows the player's geographic location at that moment in the game, and hyperlinks to Internet sites

and various news sources that illustrate immigration-related subjects as well as short videos in which Syrian refugees tell about their experiences.

The player's choices determine the Syrian migrant's possible pathways, in a complex, labyrinthine structure in which previously encountered text fragments may turn up again, whenever the choices taken do not advance the game toward the ultimate goal.

Rebuilding Haiti is a newsgame created by the European Journalism Centre. It is a multimedia news story, whose structure is similar to The Refugee Challenge. In this game, too, narrative pathways are determined by the choices of the player, who must decide how to use funds to rebuild Haiti following damage caused by the 2010 earthquake, which left 220,000 people dead and 1.5 million without housing. Gamers must decide where to allocate the (limited) resources available to them and how to respond to the dramatic situation of the Haitian people. The process involves six steps. Players cannot advance from the introduction to later phases without selecting one of three projects, all of which are aimed at a specific goal: to alleviate homelessness, combat disease, or improve the public school system. Once the main project has been chosen, players gain access to the various phases of the game: each phase presents text fragments, video footage, graphic animations, and interactive quizzes that illustrate various aspects of Haiti – its history, economy, and social and cultural conditions. At the end of each phase, players are asked to make new choices that guide the story's development and the ways that the money will be invested. After being faced with economic and moral dilemmas (for example, to give priority to the homeless or to invest in public schools), players reach the final phase of the game, called "The New Haiti," in which they can see the effect of their choices 10 years after the 2010 earthquake.

The Interactive Imagination

As we have seen, newsgames share with traditional journalism the treatment of current events, but they do so through different narrative forms: while starting from factual data, they guide the user's experience towards an act of imagination (Jacobson et al., 2016).

As pointed out by Green (2018), newsgame technologies are designed to generate interactive storytelling methods: the narrative unfolds based on the real events presented in the game, but the ludic element allows the actions performed by the users to also generate the narrative in a creative way. However, this act of imagination is neither totally free nor self-referential. The imagination is active in newsgames, but what triggers the imaginative mechanism is the concrete reality being reported on. In line with the assumptions of literary journalism, the narrative techniques of newsgames encourage the act of associating one's individual experience with broader issues concerning society, politics, and current events (Jacobson et al., 2016). Consequently, what one imagines during the game is not abstract or self-referential but rather something that pertains to the circumstances with which one is interacting, which are always based on real incidents.

As we have seen, in the techno-aesthetic perspective (as understood specifically in philosophical thought) applied to digital technologies, the interactive imagination is triggered when the virtual and the real enter into a dialectic; in other words, when the virtual environment refers to its "outside," the concrete reality. The design of newsgames is based

on the fact that the events in the game are real, which enhances empathy with the characters. Precisely for this reason, unlike other kinds of games, newsgames are particularly suited for inclusion in the techno-aesthetic paradigm.

Furthermore, as in the techno-aesthetic paradigm, in newsgames, too, the technological environment in which human sensibility is extended and externalized triggers imaginative processes but also guides those same processes to "resist" the imagining individual's absolute freedom. Here again, resistance does not arise solely from the game's internal structure, which is not reduced to standardized protocols, because the story's development is unpredictable and can even end in failure. Nevertheless, the unpredictability and possibility of failure only become tools for reflection when they refer to an actual, concrete reality. The game structure leads players to reflect more closely on reality, but starting from a basic awareness that the events they are playing with are real.

Rebuilding Haiti is particularly interesting from this point of view. As Dowling writes (2021, p. 4): "Flaurent Maurin, the journalist and game designer behind 'Rebuilding Haiti', intentionally made the task difficult to alert privileged audiences to the very real budgetary constraints and resources limitations facing such developing countries." A newsgame designed in this fashion actually plans for the user to fail: indeed, the possibility of ending in failure is precisely what nurtures deeper thought on the reality with which one is "playing" but at the same time confronting in all its complexity (Juul, 2013). The philosophy of newsgames exemplified in Rebuilding Haiti can therefore be summed up in the expression "I lose, therefore I think" (Dowling, 2021, p. 4).

In The Refugee Challenge, too, the path taken by the main character, a Syrian immigrant named Sunni, depends on choices made by the users, who are stimulated to actively create the narrative by imagining possible scenarios to which their decisions will lead. However, many of the paths lead to failure or a further challenge: the only truly safe destination turns out to be Sweden, while all the others (Italy, Greece, Turkey) make it impossible for the refugee to achieve a better life for her and her family. These failures emerge as the game is played: to avoid further defeats, players are stimulated to read the news and the information in the hyperlinks in order to make more informed choices. This means that their interactive and imaginative acts are guided by the environment in which they are immersed. The dialectic between individual freedom and resistance and the unpredictability of the environment is never resolved in favor of one pole or another.

Newsgames that do not present this connection between the game's characteristics and reference to the complexity and unpredictability of the concrete reality must therefore be considered lacking from the perspective of techno-aesthetics. These types of games run the risk of remaining fixed to the an-aesthetic, self-referential paradigm, or to a resistance that remains purely internal to the game and is never externalized. This is another reason why these two case studies have been chosen: they both enter fully into the techno-aesthetic paradigm and meet its four fundamental criteria.

Gamification as a Tool for Reflecting on Reality

In the case of newsgames, gaming is not viewed as a place to escape from reality or as a form of disengagement. On the contrary, studies on newsgames "have come to an overwhelming consensus countering mid-twentieth-century game theorist Johan Huizinga's original concept of the magic circle, undermining the assumption that 'the act of game playing requires the crossing of a boundary from the ordinary world' into a space of pure fantasy" (Dowling, 2021, p. 23).

Similar to the techno-aesthetic paradigm, in newsgames the ludic element does not give rise to any an-aesthetic effects. On the contrary, many newsgames are built around a system of rewards and incentives that direct the gamer's attention toward the outside reality, triggering reflective processes that are in no way self-referential. The rewards involved have nothing to do with acquiring points or badges; rather, they give a sense of achievement from gaining skills and a greater ability to relate to the specific game environment.

In this case, too, Rebuilding Haiti provides a good example. The gamer's goal is never self-referential: in other words, it is not linked to obtaining the points needed to meet individual goals. On the contrary, players are asked to make complex decisions that have consequences on the environment in which they are interacting. For example, when spending the limited resources at hand, they must decide whether to give priority to rebuilding houses, taking care of the sick, or improving the country's school system, thus also grappling with moral dilemmas. To be successful in the game involves improving the overall condition in the social context in which the gamer is immersed: growing one's abilities is directly connected with resolving the problems of people that the gamer is brought to empathize with in the act of playing the game.

Similarly, the game structure of The Refugee Challenge stimulates players to enrich their knowledge about the conditions of Syrian refugees. The narrative is structured in a fragmentary fashion: players do not possess all the information from the beginning, and whether they make successful choices depends above all on their ability to become more deeply informed about the topics presented in the text fragments, with links to multimedia content (news, videos, personal testimony). Furthermore, every step of the game brings players face-to-face with the dramatic plight of Syrian refugees and the potentially tragic consequences that may ensue for them from making poor choices about which path to take. Choosing to set off for Turkey, for example, entails enormous difficulties for Sunni. Players work through these challenges not only through the fate of her character but also through interviews with refugees who recount their stories, in a sort of game of mirrors between the immersive environment of the newsgame and reality.

The Transformation of Users' Experience and Schemas

As in the techno-aesthetic paradigm, the experience of newsgames has the capacity to change users' perception and interpretation of reality. In this case, too, the process is triggered by the unfamiliar experiences into which newsgames draw their users, bringing

them into direct contact with circumstances, stories, and environments they would not normally think about. However, thanks to the ludic component, this exploration is engaging and not abstract.

In the case of The Refugee Challenge, for example, gamers are led to identify with the character whose role they take: a migrant in search of a better life. Multiple characteristics of newsgames facilitate this identification process. First, there are explicit invitations to identify with the character. For example, the game's subtitle is "Can You Break into Fortress Europe?" which comes across as a sort of plea, encouraging the gamer to understand the goal as social and ethical in nature, rather than simply ludic. The game's graphics and design also facilitate empathy. As Plewe and Fürsich note (2018: 2478), "The Refugee Challenge uses photographs and videos to illustrate the situation of the refugees. They talk about hopelessness and despair facing the struggles of entering the European Union, ranging from physical abuse by border patrols in Greece and Bulgaria to their feeling of being unwelcome or stranded in one of the refugee camps in or outside Europe." A game constructed this way has the capacity to arouse a form of "reactive empathy," that is, a "feeling of sympathy or pity, towards the refugees" (Plewe and Fürsich, 2018: 2479).

The same mechanism can be described with respect to Rebuilding Haiti. In this case, too, each phase of the game presents photographs and video testimony, in which Haitians talk about difficulties stemming from the damage caused by the 2010 earthquake: players are given insight into their stories and life journeys, which fosters a mechanism of empathy and accountability. Although this takes place in a ludic context, players are inclined to make choices to alleviate the suffering of the Haitian people. The thinking involved in winning the game is therefore also emotional in nature, since the goal of succeeding in creating an effective investment plan is connected to a situation that really exists and with which (thanks to textual, video, and graphic materials) players are prone to empathize. To this is added the many pieces of information they are able to obtain as they move from one step to the next in the game.

The Performances of Sensibility

Finally, as in the techno-aesthetic paradigm, in newgames, too, the user's sensibility must be called upon to perform tasks. Indeed, playing newsgames does not involve a passive consumption of the environment's simulated and virtual contents, as if the player were simply watching a dramatized performance of the news. On the contrary, the player's relationship with the game implies a completely different kind of involvement compared to broadcast media. The gamer is asked either to perform real physical actions or, more generally, to make choices that involve an active change of the environment in which he or she is engaged (Hjorth, 2011).

In the case of The Refugee Challenge, the gamer is called upon to personally face the difficulties, human rights violations, and even violence inflicted on migrants. To do so, he or she must perform a set of tasks specifically aimed at relieving a refugee's suffering and enabling her to achieve a better life. In the same way, in Rebuilding Haiti reading the text fragments and looking at the photographs and videos provide the gamer with the tools to

actively guide the narrative course. Thus, players are asked to perform tasks that directly affect the fate of the Haitian people, and which involve choosing to give priority to some social categories over others (due to the scarcity of available funds). In both games, the entire process places the ludic, aesthetic, and perceptual experience in a context of the "performance of sensibility." Only through this type of interaction, in which individuals do not passively consume the facts that are told to them but act in first person to change their course, can the transformation of subjectivity be fully realized.

Discussion

Talking about journalistic information in terms of techno-aesthetic narratives is useful for several reasons. In the first place, thought on techno-aesthetics has been integrated over the years into the broader examination of "visual culture" and "media aesthetics" (Pinotti and Somaini, 2016; Diodato and Somaini, 2011). The extension of human sensibility into technological prostheses that innervates it has been investigated in many fields, from literature to the visual arts, including forms of communication mediated by digital devices. At the moment, however, this field of study has not turned its attention to journalistic narratives. Moreover, this broadening of perspective responds to a research question posed by Montani, who has pondered the foundations and applications of a "techno-aesthetic education." By this, he means a reflection on "the sense that we have in common," constituted and reorganized today in the context of these media environments," which he understands in terms of an "inexhaustible creative and interactive reorganization of the relationship between cyber space [...] and real space" (Montani, 2015: 80-81). The element of reality that resides in the relationship between the gamer and the media environment of newsgames, along with the possibility of becoming involved in unfamiliar situations through gaming, thereby reinforcing a sense of the "common," is conducive to reflection on the role of digital journalism in achieving this specific educational task.

In the context of journalism studies, reflection on gamification processes can be enriched by the theoretical paradigm of the techno-aesthetic: it helps to shed light on the informational and ethical potential of a journalism that conveys news to its audiences through "ludic" methods. The literature on the changing concept of objectivity in digital journalism can also benefit from this connection with techno-aesthetics. Michael Schudson (2018: 65-67), for example, has written about the need to consider journalistic objectivity on digital platforms as an "objectivity of empathy," which brings together an accurate account of the facts with the ability to engage the audience emotionally, conveying a message that draws the audience into an empathetic state. As we have seen, techno-aesthetic news narratives could very well fall under this model.

Finally, it is clear that these narratives cannot be discussed in purely positive terms. It has been noted that game designers can program newsgames with the explicit aim of persuading their audiences (Sicart, 2008). Whenever an ideological intention is involved, the externalization of sensibility into a ludic environment could be dangerous. This may be particularly true for games such as newsgames that, at least in appearance, reproduce events that have really happened. The ideology of the game designers may be masked by

the apparent objectivity of the fact reported in the game, thereby making the players' recognition of themselves as "implied reader[s]" (Aarseth, 2007) and the activation of resistance strategies more complex. From this point of view, studies on newsgame audiences are needed to understand the boundaries between their ethical and ideological functions. As has been observed, "studies on the overall effectiveness of newsgames are still rare" (Plewe and Fürsich, 2018, 2473). Therefore, framing news narratives according to the precepts of the techno-aesthetic paradigm can also be a useful theoretical tool for these types of studies. Specifically, it would be helpful for understanding if and how some strategies of resistance to the ideologies advanced by specific videogame – such as the video Let's Play (i.e., films that "fans create of themselves playing video games, coupling game play footage with simultaneously recorded commentary"; Nguyen, 2016) – may also be applicable to newsgames.

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