H-ermes. Journal of Communication
H-ermes, J. Comm. 17 (2020), 97-114
ISSN 2284-0753, DOI 10.1285/i22840753n17p97
http://siba-ese.unisalento.it

From Gamification to AI-Gamification: The Case of Social Network Journalism

Luca Serafini

Gamification, understood as the use of ludic mechanisms in non-ludic contexts, is seen today as a practice ingrained in new technologies, especially in new media. The shift of journalism onto social networks has laid the foundations for a ludic communicative paradigm that revolves specifically around gaming mechanisms. Nevertheless, recent developments in artificial intelligence call for a partial redefinition of the term "gamification," so as to situate it in its relations with machines and algorithms. For some time now, what are known as empathic media have signaled a turning point in the development of an emotional artificial intelligence, capable of eliciting and responding to the emotional states of consumers and users for commercial purposes. In recent years, this use of artificial emotional intelligence has also made its way into journalism on social networks. This communications channel builds on tools such as sensationalism, irony, and the creation of an empathetic connection with readers—centered on sharing a ludic, humorous paradigm of communication. In this instance, gamification is transformed into AI-gamification, since the aim is to make these mechanisms scientific and commercially profitable through the use of artificial intelligence. Echobox, a social media platform based on artificial intelligence, used by media to communicate more efficiently with readers on social platforms, will provide a case study by which to analyze this effort. I will also show the benefits and drawbacks of this shift from gamification to AI-gamification, examining in particular the capacities and limits of the algorithms in developing a ludic human language whose goal is to increase both users' emotional involvement and the readership of the articles (and, consequently, the revenue) of the media outlets.

Keywords: Gamification, Journalism, Social networks, News, Artificial intelligence.

Introduction

The use of artificial intelligence to interpret human emotions has continued to gain momentum in recent years, with applications in a variety of sectors. Marketing increasingly exploits the ability of algorithms and technologies to "read" emotions, as do all areas in which there is an effort to turn scientific knowledge about emotions into economic and commercial value. The so-called empathic media make up the first, most important category of this phenomenon, which allows it to be situated within a defined sociological lexicon. Nevertheless, research on empathic media has thus far to study how artificial intelligence is applied to the domain of gamification. As I will show in this paper, gaming is paradigmatic for establishing the possibilities and limits of algorithms in understanding emotions in the specific contexts in which they appear. The use of artificial intelligence in gamification-related mechanisms therefore demands a

preliminary conceptual redefinition, followed by a more in-depth scholarly treatment that examines and assesses concrete dynamics in the application of AI to gaming. As I will show, attention needs to be focused on the transition from gamification to AI-gamification.

To do this, I will concentrate on an area that has been increasingly contaminated by gamification in recent years, namely, news information. Primarily because of its gradual shift onto social media, journalism is trying to use artificial intelligence to gain a scientific understanding of gamification and commercially exploit it, thereby transforming it into AI-gamification. Hence, by examining the example of Echobox, a social media publishing software whose aim is to take the place of human social media managers in developing a gaming communication typical of social networks, I will illustrate this shift from gamification to AI-gamification while at the same time probing its possibilities and limits. By doing so, I hope to enrich our theoretical understanding of empathic media as well as the sociological lexicon associated with it.

1. The Gamification of News Information

I begin, then, by offering a definition of gamification and by clarifying how it relates to journalism. At its most basic, gamification is defined as "the application of game design principles in non-gaming contexts" (Robson et al. 2015, p. 411). This may involve the use of a design typical of videogames or the implementation of actual games to facilitate or make particular tasks more enjoyable. The term was coined between 2002 and 2003 by a game designer commissioned to develop an interface similar to that of a game for electronic devices, such as ATMs and vending machines (Pelling 2012). Within a few years, the gamification concept yielded applications related to the ability to solve problems through gaming (Hamari et al. 2014) as well as to the capability of boosting user engagement based on the use of gaming design principles and mechanisms (Juho, 2013, Suh et al, 2018). The latter, user engagement, is an especially useful topic to focus on for this study because it refers to a series of dynamics typical of social networks, which also incorporate journalism. The link

between gamification and engagement on new media became a focus of investigation as early as the 2000s and was progressively developed thereafter.

For example, in 2005, Bunchball created a software program (Dunder Mifflin Infinity) that was used for the American television series, *The Office*. Using this software, users were able to enter into a virtual environment where they performed tasks similar to those of the characters on the show. Bunchball's precise goal in introducing these mechanisms from the gaming world was to increase engagement with the TV series on Internet sites.

However, to fully understand the link between gamification and journalism, we need to distinguish between two different meanings of the word gamification: one is more "direct" and the other more "latent," but both are tied to the way gaming is used in the news industry. First of all, there is the application of virtual reality to the reporting of news, through tools that allow the events to be "played with" by entering into the environment in which they occur. The potential of applying virtual reality to journalism was identified back in the 1990s (Biocca and Levy 1995, p. 128). This form of gamification has been called "immersive journalism" since the 2000s (De la Peña et al. 2010). Some media companies, such as EmblematicGroup, produce news reports on their platforms that allow users to immerse themselves in the place where the events take place. By wearing headphones and clicking on a story, users can witness events such as civil wars, domestic violence, clashes between demonstrators and police, and many others. These reproductions created through virtual reality allow observers to overcome the spatial and temporal distance separating them from what happened and increase their involvement in the events being reported (Hardee 2016).

Still in relation to the more direct meaning of the word, gamification in journalism also has to do with the possibility offered by some newspapers to play with actual videogames associated with news stories. For example, Australia's ABC has created a videogame that allows viewers to put themselves in the shoes of Amazon employees in Australian warehouses, to experience their harrowing working conditions (ABC 2019). Similarly, *The Financial Times* has developed Uber Game, a videogame that gives viewers the opportunity to experience what it's like to be an Uber driver (The Financial Times 2019). These two examples

stand at the boundary between videogames and virtual reality. However, in other cases "gaming" with the news can mean more for users than just putting themselves inside a story; it can mean challenging themselves to become actors of the news story itself. This is the case for *The New York Times* videogame "You Draw It," which gives subscribers the chance to complete graphics partially created by the editorial staff: users make their predictions on political and economic developments in the United States and then later check on how accurate they were (The New York Times 2017). What needs to be highlighted in all these applications of gamification to journalism is the earlier mentioned issue of engagement. The ludic element serves to increase engagement to the extent that, as Sherry Turkle remarked, what distinguishes videogames from media such as television is the active as opposed to the passive component: "Television is something you watch, video games are something you do […], a world that you enter and […] something you become" (Turkle 2005, p. 67).

The use of virtual reality and videogames is thus the first mode—the most direct and immediate one—by which gamification is applied to journalism. Then there's a second mode, which I've defined as latent, which has to do with the intrinsically playful aspect of a series of platforms that have by now become the main means not only of communication but also of information, globally. As is well known, new media have characteristics defined by scholars in terms of affordances, namely, the latent, functional properties of technologies that serve as a framework for the possibility of an agentic action in relation to an object, although without causing it (Hutchby 2001). They point to the mutual modeling process between technologies and people. The hallmarks of new media that can be conceived in terms of affordances include, among others, digitality, multimediality, interactivity, hypertextuality, and connectivity (Lister et al. 2009). There is no doubt, however, that in addition to those just mentioned, the ludic component is a constitutive characteristic of new technologies, such as to successfully model the behavior and attitude of the people who make use of them. As Baricco points out, the design of the iPhone, along with the system of likes and followers on Facebook, Twitter, Tinder, and other social media and apps, have a markedly ludic component to them, which also has to do with the idea of the

simplicity they convey—simplicity in the learning mechanisms, but also in resolving problems that at one time were extremely complex, such as finding the ideal life partner. Everything is now reduced to easy, enjoyable procedures on instruments that are equally easy and enjoyable to use, based on typical videogame schemas (Baricco 2018, pp. 141-165). Gamification is consequently intrinsic to new technologies, independently of the actual use of specific videogames or games. This means that when certain sectors that were previously outside the new media are swallowed up by them, they are at the same time absorbed into the gamification paradigm. These sectors were not originally built around fun, gaming, and simplicity, but because of their shift onto platforms like Facebook, Instagram, and so on, they gradually take on essentially ludic characteristics. This takes place, as mentioned earlier, independently of whether games are actually used or not.

As for journalism, this more latent gamification is tied specifically to the affordances of the new media and to the fact that there is such a massive transfer of information onto these platforms today. In Italy, the sale of print newspapers has plummeted, beginning specifically at the time when social networks like Facebook and Twitter began to gain ground in the country (Meloni 2017, p. 9). Statistics show that for some years now Facebook has become the main means of accessing news content in most Western countries (Meloni 2017, p. 81) or, at the very least, the second medium after television (Nicodemo 2017, p. 26). It is clear that the shifting of news content onto social platforms requires newspapers to adapt their communicative codes to models with the same nature as those of the hosting platforms. Given the affordances of these platforms, social network journalism tends not only toward sensationalism and a generally "emotional" communication of the news but also toward a ludic paradigm in the broadest sense (Uribe and Gunter 2007; Pantti, 2010; Oliver et al. 2012). This is conspicuous, for example, in changes in agenda setting: the fact that more and more preference is given to entertaining news that lends itself easily to being shared by users. The language is also becoming more colloquial, with an expressive style hovering between written and oral, and between a linguistic item and a paralinguistic one:

for example, through the use of emoticons and creative punctuation in the copy of articles launched on Facebook and other social networks (Scarfone 2017).

As Michele Mezza has rightly observed, in social communication, including that of newspapers, you talk to a reader as if you were speaking to a friend, and the information ends up being identical to how social relations are conceptualized (Mezza 2015, pp. 12-13). Simply put, gamification has now invaded the world of communication (Ortoleva 2009). As far as journalism is concerned, this has taken place both explicitly (the use of videogames to report new stories) and latently (the absorption of a ludic communication paradigm, the turn toward colloquial, non-didactic language, often centered on irony and sarcasm.) This ironic and intrinsically ludic "turn" is especially visible in the way newspapers chose to create headlines and promote their articles on social networks such as Facebook: using short, often playful sentences, whose primary aim is to entertain rather than inform or, more accurately, to raise the level of engagement (a typical goal of gamification, as we've seen) through gaming. The gamification of journalistic language is thus accompanied by the gamification in the design of the news, essential for finding success on platforms in which the circulation of articles depends literally on videogame scores, such as the number of likes, reactions, and shares. On this latter front, as we will see in the next section, newspapers have been incorporating artificial intelligence tools for years to win the "war of gamification" and turn the process of capturing user emotions into a science for converting them into clicks and financial gain. More recently, this AI-gamification, namely the application of artificial intelligence to gamification, has invaded the field of linguistic gamification, too, with results that I will examine in the final section.

2. The Transition to AI-gamification in Journalism

The shift of news information from gamification to AI-gamification involves the application of artificial intelligence to the emotional and ludic aspects of communication on social media. Obviously, this is consequent to the already marked tendency to apply artificial intelligence to journalism in and of itself. This first took place in the pure and simple activity of writing articles: robots that take

care of this task already exist, including Quakebot, an algorithm also used by some newsrooms, such as that of *The Los Angeles Times* (Oremus 2014). Then there is what is referred to as computational journalism, which uses algorithms to determine how much interest will be sparked by certain subjects in specific segments of the public. Some newsrooms use it to choose which articles to write and which news events to cover (Coddington 2015). As discussed earlier with regard to affordances, since social networks force a ludic, emotional communication style onto news information, too, often editorial choices are no longer made on the basis of press values or on the relevance of the news but instead on the basis of readers' previous models, likes, and shares, according to metrics that cause popularity to take the place of significance (Siapera 2020).

In other words, the quantification of likes and shares implies that the newspaper chooses its editorial lines on the basis of metrics that are purely emotional and ludic. However, this is made possible specifically by the ability of artificial intelligence tools to provide a scientific understanding of emotions and gamification. Before writing, then, journalists carefully assess the popularity of particular issues, privileging articles that have gone viral, but whose success is due precisely to the algorithms of Facebook and the other social networks, which, as we saw, favor highly emotional content (Vu 2013). In this case, too, gamification is somehow "captured" and interpreted scientifically by technological systems and transformed into AI-gamification. Furthermore, the dominating paradigm of the social networks is, by definition, sociability, and, as we have seen, to adapt to it, journalism uses typically social and relational modes of communication.

However, AI-gamification acts on this, too, by making this sociability and relationality also into something quantifiable and usable for commercial ends based on scientific parameters. This can be found, for example, in the concept and practice of "mutual journalism" (Lewis et al 2014), the kind of journalism that stimulates interaction with readers by soliciting their opinions and comments (most obviously, when newspapers launch an article on social media by asking: "What do you think about it?") This form of relationality, too, is often used to refine metrics that lead to decisions on future publishing choices. Mutual

journalism thus deviates from social practice—often revolving around an exchange between newspaper and readers based on irony and playful communication—as a means for using that same ironic, playful communication to determine which content will be most successful (and, consequently, what to publish in the future) on the basis of scientific parameters and artificial intelligence.

3. Empathic Media

The processes described thus far are in some ways an additional form of what scholars have classified for some years now as "empathic media." Empathic media involve the ability of media to discern through artificial intelligence what is most significant to people from an emotional point of view, in order to then act on those same emotional states (McStay 2014). Accordingly, it is a form of datification of the emotional life (Mayer-Schönberger and Cukier 2013) that converts emotions into data, and that has its roots in affective computing (Picard 1997). The affective application of artificial intelligence implies that machines and algorithms must somehow attempt to "empathize" with users by reading their emotional states. Clearly, this type of machinic empathy does not come about through a mental process on the part of the machines themselves—that would be impossible—but thanks to a massive collection of data on emotional states, as practiced, for example, in sentiment analysis. As McStay points out, the weakness of algorithms lies in their inability to intuitively infer the significance of a social situation, but their strength lies in their capacity to capture and store an amount of data on emotions that is inaccessible to human beings (McStay 2018). This highlights the main factor that is simultaneously an asset and a remaining roadblock for systems of emotional artificial intelligence, a factor that is crucial for analyzing AI-gamification as it is applied to social network journalism: empathic media act on the basis of a universal categorization of emotions that in certain cases makes it difficult to apply these "emotional *a prioris*" to the specific context in which an individual emotion appears.

A categorial and universalist approach has been championed repeatedly by theorists of emotional artificial intelligence: the fundamental premise of this

approach is that there exist a defined number of basic emotions that are ahistorical, universal, and connected with individuals' physiological states. This approach has its roots in classical studies on the subject, such as those by Ekman and Friesen (1971) and Duchenne (1990). These universalist assumptions have been applied in various fields pertaining to empathic media: for example, in the area of facial coding, whose aim is to create a taxonomic classification of emotional states based on facial expressions, or in the area of voice recognition. In this latter field, as analyzed by McStay, the example of Beyond Verbal is significant: rather than scanning the content of conversations, this software picks up on paralinguistic signals, such as tone of voice or pauses in speech, in order to extrapolate data on the speaker's emotional state. This conversion of voice signals into data on emotions happens using an approach that is openly universalist and categorial, as declared explicitly by the company that produces the software (McStay 2018, pp. 78-80).

A universalist and categorial vision of emotions is clearly more useful to applying artificial intelligence to the affective life. Indeed, the more importance is given to the context in which the emotion is expressed, the more complex it is for an algorithm to scientifically extract a meaning from that emotion. The categorial approach has been challenged by many scholars: Russel (1994), for example, points out that any facial expression, such as a smile, can express positive or negative moods depending on the context in which it appears. The categorial approach is based on a monistic vision of the mind-body relation, according to which a bodily expression is the direct consequence of an inner physiological state that is definable *a priori*, whereas the "situational" approach emphasizes the social, situated component of emotions. From this perspective, physiology is inseparable from context. This also holds true for emotional states that translate into linguistic expressions pertaining to the realm of irony and entertainment and, therefore, lie within the framework of the gamification paradigm. As Stearns (1994) observes, for example, the expression "being cool" arises out of nowhere and in reference to a particular social situation. As such, the emotional meaning of the expression cannot be defined *a priori* and on the basis of a categorial classification of the emotions.

This phenomenological approach can consequently be applied to all expressions of the emotional life, from paralinguistic to linguistic ones. Indeed, in the next section we will see that the context turns out to be crucial for assessing the effectiveness of AI-gamification as it relates to social network journalism. As a case in point, is it possible for artificial intelligence to understand the principles of posting news articles on social networks, adapting them to the ironic and inherently ludic language of social communication and making them effective for sparking user interest and engagement? Or, on the contrary, is the ludic language created on the basis of the gaming affordances typical of social networks inexpressible except on the basis of contextual elements that an algorithm is incapable of grasping? Before we address these questions, it must be pointed out that the algorithms used by most empathic media are often trained to extract meaning even from new circumstances. In other words, the techniques of machine learning on which they're built enable the algorithms to learn on their own from a situation occurring for the first time. These algorithms are self-modifying as they work and, as such, are constructed, at least theoretically, to be able to apply a "contextual intelligence" even to unfamiliar circumstances (McStay 2018, p. 19).

Contextual intelligence in AI-gamification implies that the technology must be able to engage users, entertain them, and succeed at it better than a human intelligence would. In the context of social network journalism, the technology must be able to develop a language that is more ironic, fun, and engaging than any social media manager at a newspaper would be able to develop. As stated earlier, this implies that the algorithm must be able to understand the news context, capture the elements that best lend themselves to an ironic, ludic, engaging presentation, and develop them linguistically. In short, gaming is a particularly relevant sector of empathic media—a fact that also emerges from the attempt of some of the big players in the digital world to endow their branded conversational digital assistants (chatbots) with a real "personality." Through a collaboration with Pixar, for example, Google gave its chatbots an identity, making them capable of the humorous, ironic conversations typical of gaming language. The fact that these artificial intelligences are able to joke and be playful arises precisely from their ability to surprise the user with non-mechanical answers

adapted to the situation, by modulating their tone of voice depending on the context and type of message to be communicated, such as in the case of Amazon's voice assistant, Alexa. This illustrates not only the importance of gaming in empathic media but also that the application of artificial intelligence to the language of gaming requires algorithms that are able to understand individual situations, to self-modify depending on the context, and to develop ludic communications that are as effective as possible. This is exactly the issue that arises with the social media management tools that leverage artificial intelligence and used by newspapers to communicate effectively on social networks, thus making evident the transition from gamification to AI-gamification.

4. AI-Gamification in Social Network Journalism: The Case of Echobox

As explained in the first section, the affordances of new media and social media in particular channel these technologies toward gamification, understood not only as the direct application of games in non-ludic contexts but also as a communicative model focused on a paradigm of a ludic nature. We have also seen that the turn toward ludic, ironic, and entertaining communication is in some way inherent in the shift of news information onto social networks, and that this occurs specifically because of the affordances of Facebook, Twitter, and Instagram. Over time, the progressive, massive application of artificial intelligence tools to journalism has inevitably ended up encompassing the social communication of newspapers as well. In this case, a dynamic typical of gamification is transformed into a form of AI-gamification, inasmuch as algorithms and machine intelligence are used to increase the effectiveness of this type of communication. As pointed out earlier, the biggest challenge for artificial intelligence mechanisms lies in applying contextual intelligence. This is a problem that emerges even more clearly when contextual intelligence merges with the need to communicate and increase engagement with some types of content using irony and sarcasm, which, being tied to the individual communicative context and to the inventiveness and subjectivity of the communicator, are anything but absolute or universal. In other terms, it is difficult to extract ironic content simply by gathering and classifying data, no matter how substantial they are. In the case of social network journalism,

the turn taken by newspapers toward gaming is accomplished both through the change in the criteria of newsworthiness (the news of a politician's gaffe will be privileged over the news of a peace agreement in the Middle East), and by creating headlines and teasers for articles on social media with a markedly ironic, sarcastic, and entertaining component.

Echobox is a social media platform for publishers whose purpose is to make news posts on social media more effective (in terms of clicks and general engagement). Thus, it is a software that uses artificial intelligence to make gamification scientific, to transform it into AI-gamification. The basic belief is that an artificial social media manager can be more effective in interacting with users than a flesh-and-blood social media manager, despite the earlier mentioned difficulties that an algorithm has in expressing itself through a typically contextual communicative code like that of irony. However, as noted by McStay and cited earlier, the advantage of artificial intelligence is that it can store a wealth of information not accessible to a human being; obviously, this is also true for determining what is most effective on a social network. Looking at the functions of Echobox, it is immediately evident that this tool can be particularly effective in the activities of social media management that have to do with the relationship between quantities of stored data and the performance of the posts. Echobox, for example, is able to scientifically detect which posts have been effective in the past and reintroduce them accordingly on a newspaper's social network page, thereby increasing traffic. In the same way, based on the machine-learning tools at its disposal, the software is able to determine what time of day a particular article can reach peak social media interactions (interview with Federico Sattanino, Regional Sales Director of Echobox 2020).

Obviously, since every newspaper has editorial requirements beyond the need to maximize clicks and engagement, the program allows for filters to be set: for example, if the newspaper's interest lies in not publishing too many soft news items in a sequence on its Facebook page, preferring to balance them out with hard news, it can set a series of parameters (both time- and content-related) for the algorithm to use when publishing the articles. From the gamification point of view, however, the most interesting aspect is the tool's effectiveness for writing

article headlines and teasers—the elements that, along with the photo, make up the "package" presented to social media readers and on whose basis they will decide whether or not to click on the article. When creating the language for headlines and teasers—apart from when the journalist opts to pre-set them so that the algorithm doesn't have to take care of them—the main parameter used by Echobox is the relevance of the information in the article being posted on the social platforms. In other words, the algorithm is trained to identify the information in the main body of the article that is most significant from a journalistic point of view (Echobox, interview with Federico Sattanino 2020).

What is immediately evident from the preceding analysis, however, is that in the gaming communication that takes place on social media, relevance is often not the guiding criterion in the creation of article headlines and teasers. Irony and sarcasm are expressive forms that involve a contextual, not categorial, intelligence, which presupposes a knowledge of elements with greater potential for play and entertainment than the news item being posted; and it often involves aspects that are completely tangential to the news itself and have little or nothing to do with the journalistic criterion of relevance.

Why, then, was Echobox chosen as the social media management platform by major Italian, French and British newspapers (*Fatto Quotidiano*, *Sole 24 Ore*, *Il Manifesto*; *Le Monde*; *The Independent*)? The main reason certainly lies in the possibility of using the tool in a "mixed" mode. As we have seen, Echobox can carry out the gaming functions of social media publishing that involve massive data collection and require less contextual intelligence. In general, by carrying out this function automatically, this tool relieves the newspaper of the need to plan content on multiple social platforms. As for the functions pertaining to the realm of linguistic gaming, the software can be imported in such a way as to allow the flesh-and-blood social media manager to write the headlines and teasers for the articles. This is exactly what *Il Fatto Quotidiano.it* does, as confirmed by Vincenzo Russo, the newspaper's social media manager (interview with Vincenzo Russo of Il Fatto Quotidiano 2020). The newspaper directed by Peter Gomez uses this software to perform all the functions described earlier (reposting of articles and planning), but Russo explained that "as for the linguistic form of the headlines

and teasers, Echobox is not very effective because it extracts quotes or other information from the content of the article that is not the most captivating and engaging on social platforms." For this reason, specifically, at *Il Fatto Quotidiano* the linguistic part of social media management is still performed by people and not machines.

There is more. It seems clear that Echobox can work acceptably well in the linguistic part of social media publishing only for newspapers that, by choice, also use a communication mode on social networks that is typical of more traditional journalism. Analyzing *Il Sole 24 Ore*'s Facebook headlines and teasers, for example, one immediately notices that they are created to highlight the most relevant information in the article. These are teasers of 3 or 4 lines, hence, quite long, that summarize the most important information. Since *Il Sole 24 Ore* is a traditional newspaper, strongly anchored to the world of paper and its discourses, it opts consciously for a non-ironic, non-gaming communication style even on social media. Consequently, it can use Echobox as needed for its linguistic functions as well.

On the other hand, it should be noted that a digital native newspaper like *TPI.it*, one of the fastest growing sites on the Italian scene, used Echobox in a beta version from October 7 to November 7, 2019, and then abandoned it. The reason, as confirmed by the newspaper, lies specifically in the software's difficulty in formulating headlines and effective teasers in line with the ironic and ludic communication style typical of a site that targets a young readership strongly rooted in social platforms, with more than a million followers (interview with TPI editorial staff 2020).

These facts confirm what is discussed in the theoretical section of this paper: the opposition between the categorial and contextual approaches of empathic media is especially obvious in the shift from gamification to AI-gamification. The reason for this is because the gaming aspect, especially its linguistic component, is by nature not easily captured by algorithms because of its ties with intuitive intelligence, which is anchored in the individual context. All these elements emerge in a paradigmatic way in social media journalism.

Conclusions

In the context of empathic media, a topic studied by a number of scholars in recent years, there has been a lack of attention on the way artificial intelligence applies to emotions directly connected with gaming mechanisms. The redefinition of the concept of gamification and the shift to AI-gamification can therefore provide a valuable contribution to the sociological lexicon. Furthermore, this redefinition serves both the theoretical and applied study of the possibilities and limits of artificial intelligence in making gaming-related processes scientific. For this reason, I began by retracing the concept of gamification, breaking down its main components and explaining how it presents both a "direct" side (the use of games and videogames in non-ludic contexts) and a "latent" side (the transformation of communicative contexts that are not ludic *per se* into ludic ones), relating them to the affordances of the new media. I then took the example of social media journalism as a case study for elucidating the transition from gamification to AI-gamification. After analyzing the general application of artificial intelligence tools to journalism, I subsequently examined those most involved in the gaming realm.

In this area, I chose to analyze how a social media publishing platform such as Echobox works, since it is particularly significant in highlighting the possibilities and limits of AI in its application to gaming. What we have seen is that gaming communication, which is strongly anchored to contextual elements, still resists being entirely "captured" by machine intelligence, especially as far as the purely linguistic aspects are concerned. Nevertheless, it is clear that artificial intelligence can already assist in maximizing the effectiveness of game-related communication. The fact that the newspapers examined for this study use a mixed mode of operation, combining algorithms and human functions, thus leaves wide open the possibility that AI-gamification will be increasingly improved, ultimately becoming effective in areas in which contextual intelligence still prevails over categorial intelligence. Further studies need to be conducted in order to understand how much (and when) machines will truly be able to effectively perform all types of functions in gaming and related areas, or whether in some

versions of gaming itself the functionality of human beings is destined to remain irreplaceable for a long time to come.

References

ABC, 2019, The Amazon Race. A news game about what is like to work in an Amazon warehouse. URL: https://www.abc.net.au/news/2019-02-27/amazon-warehouse-workers-game-race/10803346?nw=0" https://www.abc.net.au/news/2019-02-27/amazon-warehouse-workers-game-race/10803346?nw=0. Retrieved: October 15, 2020.

Baricco A., 2018, *The Game,* Einaudi, Turin.

Biocca F., Levy M.R., 1995, *Communication Applications of Virtual Reality*, in F. Biocca and M. R. Levy (eds.), *Communication in the Age of Virtual Reality*, Lawrence Erlbaum, Hillsdale, NJ.

Coddington M., 2015, Clarifying journalism's quantitative turn: a typology for evaluating data journalism, computational journalism, and computer-assisted reporting, *Digital Journalism*, 3(3), 331-348.

De la Peña N., Weil P., Llobera J., Giannopoulos E., Pomes A., Spanlang B., Slater M., 2010, Immersive journalism: Immersive virtual reality for the first person experience news, *Presence*, 19, 291-301.

Duchenne de Boulogne G.B, (1862) 1990, *The Mechanism of Human Facial Expression*, Cambridge University Press, Cambridge.

Echobox, Interview with Regional Sales Manager Federico Sattanino, June 2020.

Ekman P., Friesen W.V., 1971, *Biological and Cultural Contributions to Body and Facial Movement*, in J. Blacking (ed.), *The Anthropology of the Body,* Academic Press, London.

Hamari, J., Shernoff, D. J., Rowe, E., Coller. B., Asbell-Clarke, J., & Edwards, T., 2014, Challenging games help students learn: An empirical study on engagement, flow and immersion in game-based learning, *Computers in Human Behavior*, 54, 133–134.

Hardee G.M., 2016, *Immersive journalism in VR: Four Theoretical domains for researching a narrative design framework,* in J. Tao, T.Tan and R.W. Picard (eds.), *Affective Computing and Intelligent Interaction*, First International Conference, October 2005 Proceedings, Springer, Berlin, 127-134.

Hutchby I., 2001, Technologies, texts and affordances*, Sociology*, 35(2), 441-456.

Il Fatto Quotidiano, Interview with social media manager Vincenzo Russo on August 20, 2020.

Lewis S. C., Holton A. E., Coddington M., 2014, Reciprocal journalism: a concept of mutual exchange between journalists and audiences, *Journalism Practice*, 8(2), 229-241.

Lister M., Dovey J., Giddings S., Grant I, Kelly K., 2009, *New Media: A Critical Introduction*, Taylor & Francis, Milton Park.

Mayer-Schönberger V., Cukier K., 2013, *Big Data: A Revolution that Will Transform How We Live, Work and Think,* John Murray, London.

McStay, A., 2014, *Privacy and Philosophy: New Media and Affective Protocol*, Peter Lang, New York.
McStay, A., 2018, *Emotional AI: The Rise of Empathic Media,* SAGE, London.
Meloni V., 2017, *Il crepuscolo dei media*, Laterza, Rome-Bari.
Mezza M., 2015, *Giornalismi nella rete*, Donzelli, Rome.
New York Times (2017), *You Draw It.* URL: https://www.nytimes.com/interactive/2017/01/15/us/politics/you-draw-obama-legacy.html. Retrieved: October 15, 2020.
Nicodemo F., 2017, *Disinformatia*, Marsilio, Venezia.
Pantti M., 2010, The value of emotion: An examination of television journalists' notions of emotionality, *European Journal of Communication*, 25 (2), 168-81.
Picard, R.W., 1997, *Affective Computing*, MIT, Cambridge, MA.
Oremus W., 2014, The first news report on the LA earthquake was written by a robot, *Slate*, March 17, 2014. URL: https://slate.com/technology/2014/03/quakebot-los-angeles-times-robot-journalist-writes-article-on-la-earthquake.html. Retrieved: October 15, 2020.
Ortoleva P., 2009, *Il secolo dei media*, Il Saggiatore, Milan.
Pelling, Nick. "The (Short) Prehistory of 'Gamification'..." Funding Startups (& Other Impossibilities), January 6, 2012. URL: https://nanodome.wordpress.com/2011/08/09/the-short-prehistory-of-gamification/. Retrieved: October 15, 2020.
Robson, K., Plangger, K., Kietzmann, J., McCarthy, I., Pitt, L., 2015, Is it all a game? Understanding the principles of gamification, *Business Horizons*, 58 (4), 411–420.
Russel J.A., 1994, Is there universal recognition of emotion from facial expression? A review of the cross-cultural studies, *Psychological Bulletin*, 115 (1), 102-41.
Scarfone G., 2017, Giornalismo e social network: un'analisi linguistica, *Lingue e Culture dei Media*, 1 (1), 44-89.
Siapera E., 2020, *I dilemmi del giornalismo: le sfide di internet per il giornalismo professionale e la sostenibilità dei media*, in Robert Simon (ed.), *Il giornalismo sotto attacco*, Giappichelli, Bologna.
Stearns P.N., 1994, *American Cool: Constructing a Twentieth-century Emotional Style*, NYU Press, New York.
The Financial Times, 2019, The Uber Game. Can you make it in the gig economy? URL: https://ig.ft.com/uber-game/ Retrieved: October 15, 2020.
TPI, Interview with editorial staff on August 28, 2020.
Turkle S., 2005, *The Second Self: Computers and The Human Spirit*, MIT Press, Cambridge, MA.
Uribe R., Gunter B., 2007, Are 'sensational' news stories more likely to trigger viewers' emotions than non-sensational news stories? A content analysis of British TV News, *European Journal of Communication*, 22, 207-28.
Vu H. T., 2013, The online audience as gatekeeper: The influence of reader metrics on news editorial selection, *Journalism*, 15 (8), 1094-1110.