Journal of Ethics and Emerging Technologies

IEET

Research Article

Gamification as a Persuasive Technology: Characteristics and Ethical Implications

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Abstract: The merger of game elements, persuasion and digital technology results in gamification, frequently used to change behaviors and attitudes. This use of game attributes in non-game contexts raises great interest among developers and academics. However, we must consider that, if technology cannot be neutral but it is always persuasive, playful technology is to a greater extent, since it is perceived as harmless, with the purpose of promoting mere entertainment, although actually it predisposes us to be more easily convinced through fun and a favorable mood. Certainly, technological artifacts are manifestly conditioned by their design, a persuasive design, as well as by the objectives and intentions of their designers. Particularly, the fact that gamification is designed to promote certain behaviors in its users leads us to ask ourselves: what is the real purpose of gamified projects? Is it persuasive or manipulative? Do they have ethical implications? In this paper we try to answer all these questions.

Keywords: gamification, persuasion, manipulation, ethics, persuasive technology

Citation: Moya Rozalén, Silvia, 2024. Gamification as a persuasive technology: characteristics and ethical implications. *Journal of Ethics and Emerging Technologies* 34: 1. https://doi.org/10.55613/jeet.v34i1.138

Received: 30/04/2024
Accepted: 21/10/2024
Published: 23/10/2024

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1. Definition of gamification

"Gamification" is a term that implies the process of transforming the characteristics of something to make it more fun or similar to a game (Torres, 2016). Deterding et al. (2011a) published the first academic definition of gamification and although it does not really delve too deeply into the phenomenon, it is the most cited in specialized literature. This definition indicates that gamification is "the use of game design elements in non-game contexts" (Deterding et al., 2011a, p. 2). In this sense, Werbach and Hunter (2012) complete the previous definition by indicating that gamifying consists of applying "game elements and game design techniques in non-gaming contexts" (p. 28).

Other definitions place greater emphasis on behavioral transformation. This is the case of Robson et al. (2015) who state that gamification "is the application of lessons from the gaming domain to change behaviors in non-game situations" (p. 412). Subsequently, Werbach (2014) redefines gamification again, understanding it as "the process of making activities more game-like" (p. 1). With this publication, he aims to bring the concept closer to persuasive design. His intention, therefore, is to improve the initial definition (Deterding et al., 2011a) that prevails as the most popular and even improve the one that he published with Dan Hunter in 2012, to make it clearer and more certain.

These discrepancies are due to the fact that Deterding et al. (2011a) focused on game elements as a core factor of gamification but, as there is no universally accepted list of all of them, some confusion is generated when defining what constitutes a valid example of gamified initiatives. Beyond the conceptualization problems that are not the subject of this

article, we want to focus on the persuasive capacity of gamification, which is also related to its typologies and classifications. According to Werbach and Hunter (2012), there are three ways to gamify depending on the target audience segmentation. Therefore, depending on who the recipients are and the purpose of the gamified system, we can differentiate between:

i) External Gamification: it is aimed at current customers or potential customers and, therefore, it is widely used in marketing (Werbach and Hunter, 2012);

ii) Internal Gamification: these are initiatives aimed at internal staff of the organization or workers;

iii) Gamification for behavioral change: it tries to promote new habits for people that are intended to be beneficial (Werbach and Hunter, 2012). However, promoting behavior modification in the population is not always something positive or has good intentions and will ultimately depend on the purpose of the designer of the gamified system and the consequences that are generated when using it. So this modality of gamification is the one that presents the greatest complications or problems from an ethical point of view, and it is in this aspect where gamification appears as a persuasive technology. It is also the most common type of gamification and can be combined with the previous two, since its objective could be to change customer behaviors or employee behaviors.

Other authors such as Marczewski (2013) differentiate between "thin layer gamification" and "deep gamification". The first type corresponds to a superficial gamification, more focused on extrinsic motivation and closer to entertainment than engagement. The second type, on the other hand, is a kind of gamification that encompasses the fundamental intrinsic motivators (relationship, autonomy, mastery and purpose) and aims to involve the long term motivation.

For his part, Chou (2015) in his "Octalysis Model" speaks of two types of gamification: White Hat gamification and Black Hat gamification. These names come from computer science and refer to more or less ethical tactics respectively. White Hat gamification uses the motivators that make us feel powerful, satisfied and fulfilled; It does not appeal to urgent needs for the user, they are something important but that can wait. On the contrary, Black Hat gamification uses motivators that make us feel obsession or craving and that are linked to dependency and addiction behaviors. Fundamentally, it is based on uncertainty, unpredictability, scarcity and impatience and, although they are very influential in the short term, in the long run they can create negative feelings in the users due to having lost control of their own behavior.

Regarding game elements that are used to gamify (adding them to something that is not a game, such as mobile applications or a website), the most common are points, badges and leaderboards but also rules, avatars , levels, feedback, narrative, emotions, competition, cooperation, virtual economies, teams, socialization, challenges, prizes, quests or collections. Werbach and Hunter (2012) divide them into dynamics, mechanics and components, based on their decreasing degree of abstraction. Furthermore Buckley et al. (2019) add other concrete additional components of gamified systems such as progression bars, time restrictions, chance or probability, infinite experience, tangible rewards or negative scores (such as punishment or penalty).

2. What is technological persuasion?

All technology is in a certain sense persuasive, because no technological artifact can be neutral since they are created by human beings with objectives and intentions (Marcuse, 1964; Bellver, 2017; Verbeek, 2006b; Verbeek, 2011; Verbeek, 2014; Winner, 1977; Anders, 1980). If we analyze the binomial 'persuasive technology', we highlight that it refers to the creation of technological artifacts in order to persuade, and persuasion can be defined as the "activity of creating, reinforcing, modifying or extinguishing beliefs, attitudes, intentions, motivations and/or behaviors" (Gass and Seiter, 2004, p. 34).

In this sense, when a technology is used to persuade others it can be classified as persuasive technology, a concept coined by Fogg (2003) to refer to "interactive computer systems designed to change people's attitudes and behaviors" (p. 1). Persuasive technologies have clear social, psychological and ethical implications, focusing on computer and interactive products such as computers, mobile devices, internet services, intelligent environments and digital games (Oinas-Kukkonen et al., 2008) or also more specifically video games (Fogg, 2003) and persuasive video games (Bogost, 2007). This type of persuading technology is linked to the so-called persuasive design (Kjaer and Hasle, 2007) since they aim to influence users (Lockton et al., 2010).

In the case of gamification as a persuasive technology, the result generates a change in attitude and behavior in users, but this process is mediated -in turn- by other persuasive technologies that act as a channel (computers or smartphones), which increases the complexity of the phenomenon to be studied, as well as the level of persuasion that users may face. In short, we talk about persuasive technologies as an area in which gamified systems are included as a form of playful or ludic persuasion.

The truth is that the narrow border between persuading and manipulating alludes to both the transparency in the designer's intention and the purpose with which he intends to influence. Furthermore, persuasion always involves “a voluntary change in behavior, in attitude, or both. If force (coercion) or misinformation (deception) are used, we would be outside the scope of persuasive technologies” (IJsselsteijn et al., 2006, p. 1) and, therefore, we would enter the field of manipulation. So that fine dividing line between persuading and manipulating must be guarded by freedom (Spang, 2005) and respect for the will of those who are intended to be persuaded, rather than by the specific use of one or another persuasive technology.

This type of deceptive persuasion raises growing concern among certain authors, due to the moral challenges that persuasive technology presents in relation to human well-being (IJsselsteijn et al., 2006). Cialdini (2001), in his research on influence and persuasion, identifies six factors that lead people to respond in a coincidental and automated way to the persuasive messages: feeling indifferent, being in a hurry, feeling stressed, feeling insecure, being distracted, and be cognitively fatigued. This is important information for our study, since it implies that the mood of the persuaded person affects the degree of persuasion, and that the persuader can design a situation characterized by said factors or conditions. In particular, distraction is usually associated with entertainment and can be linked to certain types of 'playful deception' or fun (Goffman, 1959) and also with games and gamification.

Other researchers state that persuasion must always be ethical in order to never reach the realm of manipulation. This is the case of Baker and Martinson (2001) who establish five limits or principles that must be met in order to persuade ethically: truthfullness, authenticity, respect, fairness or justice and social responsibility. These elements constitute the so-called “TARES test”.

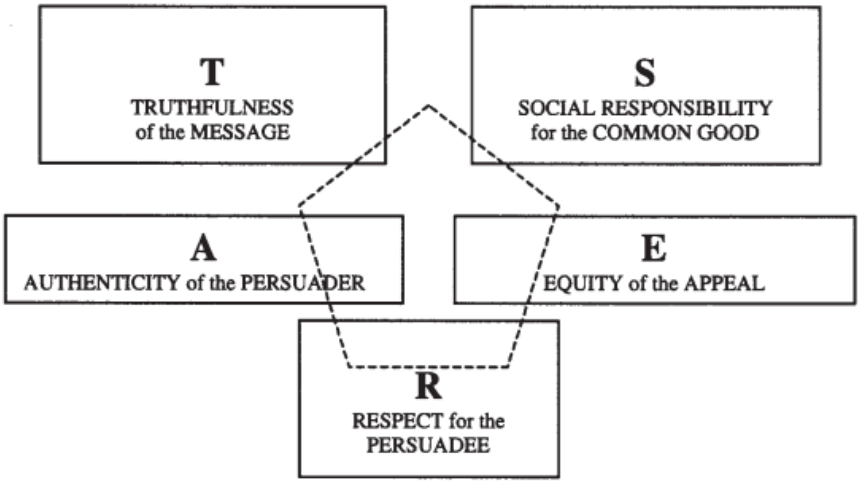

Figure 1. Five principles for ethical persuasion (Baker and Martinson, 2001, p. 160)

Therefore, currently persuasion and technology go together, configuring the so-called persuasive technologies. We see its characteristics, which we will explore in the next section, reflected in gamification, a phenomenon that is increasingly present in our lives and awakens ethical concerns due to the associated manipulative risks.

3. Types of persuasive technology and their manifestation in gamification

Fogg (2003) establishes seven types of tools used by persuasive technology, which usually work in combination and we argue that are clearly manifested in gamification. We go on detailing each one of them:

3.1. Reduction Technology:

It consists of persuading through simplification, that is, converting a complex task into a few simple steps. Therefore, making a behavior easy increases the chances of it being performed, since it is persuasive through simplicity. Furthermore, "reduction technologies also may increase a person's self-efficacy, or the person's belief in his or her ability to perform a specific behavior. This, in turn, can help the person to develop a more positive attitude" (Fogg, 2003, p. 33) in this case, with respect to the behavior desired by the designer.

In gamification we can find multiple examples of tasks that undergo reductions visually and symbolically, for example, through tokens (signals or symbols). This is the case of the act of sharing experiences, reviews and recommendations through various platforms such as Google Maps and its Local Guides program, where users rate with stars the different places they have been. Thus, at a quick glance we can make comparisons of hotels, restaurants or other businesses based on their reputation and the rankings of previous clients to choose the most popular and the best rated. The same goes for the level of users who generate these reviews, which is represented by visual badges that symbolize their experience and score in the system.

Level	Points	Badge
Level 1	0 points	No badge
Level 2	15 points	No badge
Level 3	75 points	No badge
Level 4	250 points	
Level 5	500 points	
Level 6	1,500 points	
Level 7	5,000 points	
Level 8	15,000 points	
Level 9	50,000 points	
Level 10	100,000 points	

Image 1. Levels, Points, and Badges in Google Local Guides (Google, n.d.)

3.2. Tunneling Technology:

It is a type of step-by-step guided persuasion, which consists of "leading users through a predetermined sequence of actions" (Fogg, 2003, p. 34). This fact has a double effect according to Fogg (2003): It is easier for users to deal with complex processes or situations and for designers it is an opportunity to persuade each user while they follow the designed path: controlling the contents displayed, notifications, possible itineraries, etc. A very common example is found in electronic commerce, in the stages of a shopping cart, where we must complete everything that is indicated: personal data, register for a newsletter in exchange for a discount, link with social networks, add more suggested products, etc. Furthermore, in gamification we find tunneling in beating levels or in the progression bars, such as, for example, in the phases implemented to complete the LinkedIn profile or in the steps to configurate the Facebook pages.

Image 2. Profile completeness bar on LinkedIn (Linkedin, n.d.)

This was an extremely simple and successful case of gamification (see image 10), which did not require a complex environment to motivate people towards a goal. The digital bar was updated in real time and made the social network look more like a game with tasks, missions, immediate feedback, etc. Users even changed categories as they progressed in the process, until they reached the level of "eminence" (which implied having 100% of the profile completed), which would be equivalent to obtaining a master's degree.

3.3. Tailoring Technology:

It is based on influencing through personalization. Any system is much more persuasive if it provides personalized information to the user and adapts to "the individual's needs, interests, personality, usage context" (Fogg, 2003, p. 38). For example, a social network that incorporates a text editor could suggest a user improve their written expression if they perceive that they use a very limited range of words compared to other professionals in their sector. In this case, the person would be motivated to follow that personalized suggestion, especially if they are shown data, graphs or comparisons that demonstrate it and help them stand out in a competitive environment..Indeed, comparison with other people fosters competitiveness, an element which is motivating and also playful (Huizinga, 1971).

In the case of gamification, personalized rewards such as medals, badges, and user metrics associated with objectives or missions can be used, as well as virtual goods to 'customize' an avatar according to your interests. Well-known examples are the avatars of Facebook and Snapchat, social networks being one of the most popular cases of gamification where the way of designing the system, of presenting and arranging certain elements, affects the degree of persuasion.

Image 3. Customized avatars on Facebook (Facebook, n.d.)

3.4. Suggestion Technology:

This technique takes advantage of the "potential impact of making a suggestion at the most appropriate time" (Fogg, 2003, p. 41). It is common for online stores to indicate to the user that other people who saw the same item purchased such other products, as an incentive to continue browsing and make future purchases. Certainly, when people are

spirited and in a good mood it is easier for them to be persuaded, since they are predisposed to it; something that rhetorical scholars also recognize (Spang, 2005). This predisposition of a favorable mood is directly related to the positive feelings generated by entertainment and gamification. In this way, by generating a playful, pleasant and fun environment, commercial initiatives will be better received.

In the field of gamification, alert mechanisms or notifications are used that periodically remind individuals to return to the platform to take a specific action or to respond to activities of their contacts. A typical case is found in gamified systems to get fit like Fitocracy. Furthermore, in the field of gamified E-commerce it is very common to recommend products or suggest their purchase through rankings and scores such as those found on Amazon.

In this context some users recommend others and a feeling is generated trust according to community opinions. Likewise, in the field of the sharing economy[1] , gamification is used to encourage the use of some platforms by users and employees, as in the case of Lift (Mason, 2018) or Uber (Scheiber, 2017). In the latter case, drivers are suggested, through recreational techniques such as missions, challenges or special achievements, not to abandon the system and continue driving. That is, they are persuaded to continue with their professional activity for as long as possible, something delicate since driving requires breaks to rest.

Image 4. Product rating and ranking of customer reviews on Amazon (Similar Web, n.d.)

3.5. Self-Monitoring Technology:

According to Fogg (2003) "it allows people to monitor themselves to modify their attitudes or behaviors to achieve a predetermined goal or outcome" (p. 44), according to the recorded information. These technologies are based on the desire to store and share data about oneself (Morozov, 2013), as well as to eliminate the boredom of carrying out

[1] The emergence of the gamification phenomenon in the sharing economy or collaborative consumption (Botsman, 2010) is mainly manifested in the use of game elements related to reputation and social status (points, badges and leaderboards). The collaborative economy is a phenomenon that emerged in the Internet era and, in these contexts, the dynamics and game mechanics aim to create a perception of trust in products and services, among the users of a virtual community and also towards the communities or digital platforms themselves.

such monitoring, since automation allows people to know how their performance is, if they are doing well, if they are improving, etc. which increases the chances that they will continue with that target behavior. In a similar way to personality tests, these types of tools promote self-knowledge, which is why they are highly motivating (Fogg, 2003; Morozov, 2013).

In gamification we find specific game elements such as feedback and progression, represented in the form of statistics, rankings, etc., as in Strava (an application for cyclists). This type of persuasion aligns perfectly with other contemporary technological movements such as big data, social networks or the "Quantified Self"[2] (Wolf, 2010; Lupton, 2016) that complement and reinforcethe phenomenon of gamification (Hamari et al., 2018).

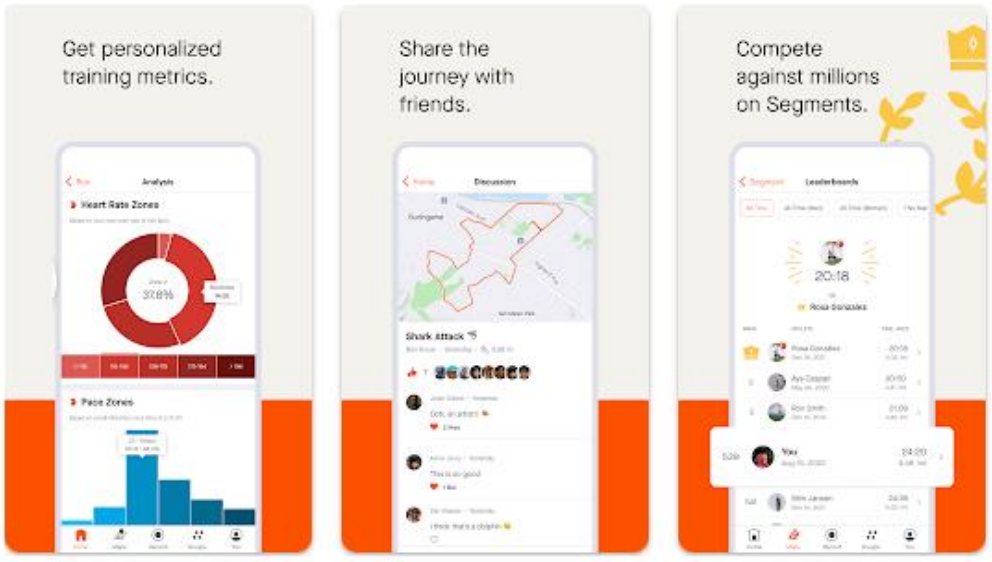

Image 5. Some functionalities of the Strava gamified APP

3.6. Surveillance Technology:

It implies that a few can monitor the behavior of many to modify their behavior; That is, persuasion is exercised through observation. Look out the behavior of others makes it more likely to achieve a desired behavior, since subjects behave differently if they know they are being observed. Furthermore, if someone observing another individual's behavior can punish or reward him or her for his or her behavior, the person being observed "is likely to make his actions meet the observer's expectations" (Turner, 1991, p. 126). According to Fogg (2003), this kind of technology, is ethically problematic because it makes it difficult to protect people's dignity and privacy.

When gamification is applied to the workplace, we find hierarchical surveillance systems where superiors can comprehensively view the actions carried out by their employees and subordinates. A common case would be the gamified call centers or also the control systems that Amazon uses in its warehouses, based on a record of movements, rest time and speed of performance that, through recreational elements, aims to increase the

[2] The movement called "Quantified-Self" focuses on collecting, processing and presenting behavioral, environmental and biological data and indicators that serve to evaluate personal performance and so that people can progress in their areas of interest and increase self-knowledge (Hamari et al., 2018).

productivity and performance of each employee (Maturo and Moretti, 2018). Some authors warn about this type of panoptic control (Bentham, 2017; Foucault, 1977) in combination with gamification (Han, 2017; Whitson, 2015).

3.7. Conditioning Technology:

This tool comes from behavioral psychology that was formulated by Skinner[3] in 1974 and aimed to analyze and modify behaviors. The postulates of behaviorism and operant conditioning propose a method to reward desired behaviors that also involves the use of punishments for unwanted behaviors. Therefore, it involves using "positive reinforcement to shape complex behaviors or transform already existing behaviors into habits" (Fogg, 2003, p. 53). It is important that the reinforcement be immediate and periodic, in order to increase its effectiveness, something that new technologies facilitate. Furthermore, in order to strengthen an already existing behavior, reinforcements are more effective if they are unpredictable and unexpected. Such as, for example, through randomness and the surprise factor in game elements.

In both playful and non-playful contexts, behavioral reinforcement is a widely used technique to influence, and computer games are precisely "the purest example of technology using operant conditioning" (Fogg, 2003, p. 51) through sounds, prizes, points, rankings, levels, etc. that try to modify the behavior of players so that they choose to play before doing other activities. This type of approach could conflict with the defense of play as intrinsically motivating or ʼautotelicʼ (Csikzentmihalyi, 1975), although in reality both approaches are not completely exclusive. Since there is the possibility of combining different human motivators (Guillen and Bañón, 2012)[4].

Behavioral determinism has been criticized by some researchers (Werbach and Hunter, 2012) mainly by leaving little room for freedom or personal autonomy (Deci and Ryan, 2012) and for assuming a deterministic use of the game elements used in gamification to obtain behavioral results predefined in advance in the form of user behaviors (Sicart, 2011). Indeed, when we talk about acting correctly in gamification, it is a two-way street, since users must be free to decide how to act, and the same can be said of designers, in terms of developing professional and honest behavior.

Gamified systems present multiple manifestations of material and virtual rewards, for example, in the gamified loyalty programs Starbucks Rewards, Mango Likes You, Google Play Points or Bing Rewards to motivate purchases of coffee, clothing and Android mobile applications or the use of the Microsoft web browser respectively. But penalties are also used such as countdowns, loss of accumulated points or streaks and limited time events. This is the case of some offers in gamified e-commerce or ephemeral content on social networks.

In Fogg´s opinion (2003) two persuasive tools (surveillance and conditioning) are the most problematic in ethical terms since, together with suggestion technology, they reduce the autonomy and independence of users. Likewise, people's will could be compromised in certain circumstances and, consequently, we would be talking about an unethical act "when the tactics used to persuade are deceptive" (Fogg, 2003, p. 213), which would lead us to the act of manipulation. So, we can find all the persuasive tools defined by Fogg represented in gamification as we may see in table 1.

[3] It should be taken into account that the behavioral psychology model proposed by Skinner (1976) has emphasized the importance of predetermined responses to certain stimuli.

[4] These authors talk about the combination of intrinsic, extrinsic and transcendent motivation.

Table 1. Characterization of persuasive technologies and their link with gamification

Types of persuasive technology	How does it work	Gamification example
Reduction technology	Persuade by simplification	Symbology and tokenization[5]
Tunneling technology	Step-guided persuasion	Levels and progression bars
Custom technology	Persuade by personalization	Customization of avatars, prizes or challenges
Suggestion technology	Persuade by recommendation at the right time	Predisposition and favorable attitude through fun; Recommended items, notification of activity from other users
Self monitoring technology	Persuades by tracking and self-knowledge	Immediate feedback, rankings or comparisons with oneself and other users
Surveillance technology	Persuade by observation	Gamification in the workplace, control and activity registration
Conditioning technology	Persuade by rewarding desired behavior and punishing unwanted behavior	Random rewards like points, medals, virtual goods, etc. and also penalties

Source: own elaboration, based on Fogg (2003)

4. Gamification as an ethical controversy: is it possible to manipulate through playful technology?

Due to everything stated above, there are times when, depending on the developer's intention, gamification can go from persuasion to manipulation, understood according to Braiker (2004) as a type of influence that aims to change perceptions or behaviors and is exercised to achieve personal gain. Another of its characteristics is specified in "that it thrives in an atmosphere of indirect, sinuous and even deceptive communication and often, true intentions are hidden and purposes are disguised" (Braiker, 2004 pp. 4-5). Some authors emphasize this unfavorable situation, since "The manipulated person is not aware of the sequence of events that the manipulator uses to influence his or her behavior" (Strudler, 2005, p. 459). The difference with persuasion is that the manipulator intends to influence someone to act against their will or interests (Marczewski, 2017), but the persuader only hopes to achieve a voluntary change in behavior, never forced,

[5] Tokens are part of the symbology of games and are usually elements such as coins or scores (which may or may not be virtual) and also tokens or pieces, mainly in physical games such as board games.

without deception and coercion (Versteeg, 2013). Therefore, gamification could be manipulative and immoral depending on the purpose of the system designer when it comes to modifying the behavior of its audience, whether abusive or unfair techniques have been used -like for example 'dark patterns' (Nyström, 2021)-, whether the objectives of its end users have not been taken into account or whether they are going to cause some damage.

It should be noted that gamification can manifest itself covertly and go unnoticed by users; either because they don't know what it is and how it works, or because the gamified experience itself absorbs them in such a way that it distracts them from everything else. Some researchers suggest that the engagement generated by gamification is achieved mainly through flow, an emotional state that implies enjoyment and distortion of perception (Roper and Thorpe, 2017; Chou and Ting, 2003). Versteeg (2003) speaks along these lines when he states that "the user enters a state in which he is not able to recognize the game elements or how they can affect his decision-making" (p. 20), which results in problematic precisely because of this loss of personal autonomy. This constitutes another scenario in which one could go from persuade to manipulate through unethical use of gamification.

In general, there is a more or less widespread consensus that indicates that gamification can be included in the field of persuasive technologies (Llagostera, 2012; Raftopoulos, 2014; Versteeg, 2013; Yamakami, 2013; Shahri et al., 2019), since that uses some or all of the tools established by Fogg (2003) for this type of technology that we have previously described. In this sense, it would be advisable for the user to be able to know and identify the methods that are used in order to determine when we are facing a case of unethical or manipulative persuasion through gamification.

But not only does gamification use persuasive tools, it can also be considered a 'persuasive speech' (Llagostera, 2012) because it implies a narrativity with its own intentionality and symbology, which emphasizes its rhetorical quality. Furthermore, by borrowing some elements and features from the game, gamified systems can generate a feeling of trust in users because they consider games as fun and innocent (Raftopoulos, 2014). This ambiguity of the game would leave us unprotected and vulnerable to persuasion (Llagostera, 2012; Sutton-Smith, 1997) since in a playful scenario we relax and will be more likely to be persuaded, for all the reasons explained above. Other researchers point to the same thing, who highlight that receivers, mainly the youngest, are confident regarding entertainment formats, since they consider that this type of content serves for their enjoyment rather than to persuade them (McCarty, 2004; Sayre and King, 2010). This is precisely what happens with recreational formats such as video games, advergames or gamification.

Criticisms of gamification are currently proliferating, especially due to the popularity that some cases considered unethical have achieved, such as gamified jihad (Ortiz, 2015), Club888 -in online Spanish betting- or the Chinese Social Credit System (Vieira and Topper, 2021; Ramadan, 2018; Engelmann et al., 2019). In the latter case, a score is given to each citizen based on their behavior in online and offline environments, which can lead to real rewards and punishments, which affect their lives and those of their loved ones. These reward and punitive cycles can encourage unethical actions within organizations or legitimize certain ideologies that violate fundamental rights, dehumanizing people through gamification (Fitzpatrick and Marsh, 2022).

Indeed, gamification is happening, and it is necessary to be vigilant about its persuasive nature, since the background of influencing behaviors should not be ignored

when making a moral assessment of this phenomenon since, as Thibault and Hamari (2021) state:

> Projects that aim at behavioral change -be it for commercial reasons, or for humanitarian ones, like favoring exercising- is sometimes depicted as problematic, as behavioral change is indeed the result of an exercise of power (p. 20).

These authors do not see it as exaggerated to talk about the risk of a manipulative use of gamification, since there are examples such as "dopamine loops implemented in social networks" (p. 21) or the Chinese social credit system as a state surveillance infrastructure. (Liang et al., 2018) that uses control dynamics associated with playful technology.

As we have been showing, gamification is a captivating term, which implicitly carries the notion of power and influence of games (Bogost, 2011) and whose appeal, together with the interests it arouses, makes necessary to use it taking into consideration its moral dimension to prevent its manipulative use and possible adverse effects. To begin to elucidate these particular risks of gamification, we turn again to Fogg (2003), who establishes the following warnings and ethical concerns to take into account, since they are exclusive of persuasive technology:

1st) The novelty of the technology can mask its persuasive intent.

People are unaware of the ways in which the technologies they regularly interact with have been designed and how they try to influence and persuade them (Fogg, 2003). In the case of persuasive technologies as subtle as gamification, this aspect is relevant, since it is a tool that is little known in general and has been compared to subliminal advertising, as its presence and purposes are not noticed and it acts on a subconscious level (Roper and Thorpe, 2017).

2nd) Persuasive technology can exploit the positive reputation of computers.

It is well known that technology in general is usually associated with progress, development and benefits of various kinds (Morozov, 2013). On the topic at hand, this aspect would refer to the positive reputation that computers but also games and video games have, as recreational devices that entertain us and make our lives easier (Baricco, 2020), when associated with well-intentioned values such as fun and improvements in people's lives (leisure, enjoyment, comfort, etc.).

3rd) Technology can be proactively persistent.

Unlike humans, machines "don't get tired; they can implement their persuasive strategies over and over (…) [they] persist in persuading you while you are using an application, they also can be persistent when you are not (using it)" (Fogg, 2003, p. 216). This refers to pop-ups, push notifications, emails, vibrations, lights, sounds, etc. that frequently remind us to return to an App or website. These elements, which act as calls to action or triggers to act (Fogg, 2009), are very common in gamified systems.

4th) Technology controls the interactive possibilities.

Again Fogg (2003) raises an important difference between people and machines:

When you deal with human persuaders, you can stop the persuasion process and ask for clarification, you can argue, debate, and negotiate. By contrast, when you interact with computing technology (…) You can choose either to continue or stop the interaction, but you can't go down a path the system hasn't been programmed to accept. (pp. 216-217).

In games and gamification there is an illusion of autonomy, a substitute for freedom, where the user believes they can choose their path - or that of their avatar -; but, in fact, this is the result of a scenario that a designer has previously created with limited options for action. Other scholars defend the creative capacity and active role of the player, capable of altering the ludic world (Sicart, 2009; Sicart, 2011); but this is not always possible and generally depends on how said environment has been designed, as well as the knowledge and skills of the user.

5th) Technology can affect emotions, but can´t be affected by them.

A person can perceive the feelings of another and, consequently, modify their persuasion strategy; "these cues help persuasive exchanges reach more equitable and ethical outcomes. By contrast, computing products don't (yet) read subtle cues from people" (Fogg, 2003, p. 218). Although at the moment neuroscience, artificial intelligence and facial recognition are advancing more and more, technological systems have psychological tricks that they can apply to persuade. In this sense, so that human beings are not at a disadvantage, ethical technological persuasion should include elements of reciprocity and empathy (Fogg, 2003). Furthermore, the fact that a machine expresses a human emotion can significantly influence users. In the case of gamification, the feedback messages that the system sends visually and auditorily (with phrases such as <<Welcome, I missed you!>>; <<Congratulations, good job!>> or << You are a number one!>>) are frequent and can generate emotions in the user-player.

6th) Technology cannot shoulder responsibility.

People are responsible for their creations, their actions and their omissions; and they are also able to take "partial responsibility for what happens to those whom you persuade" (Fogg, 2003, p. 218). But artifacts cannot take responsibility in the same way (Friedman, 1997) and technological products are not guilty of anything because they cannot be classified as moral agents (Fogg, 2003) nor are gamified systems. All these ethical risks must be warned, both by senders and receivers immersed in persuasive processes mediated by technology, in order to achieve honest, balanced and fair persuasion. Although these interactions usually occur between human beings who want to influence other human beings, persuasion is increasingly mediated by digital technologies. This leads us to ask new questions in the next section.

5. Technological mediation in persuasive acts: moral responsibility or neutrality?

Neutrality of technology is questionable, especially when it is designed for persuasive purposes, since "to be considered morally responsible, an actor must at least have the intention to act in a certain way, and have the freedom to carry it out" (Verbeek, 2006c, p. 271). Both aspects are problematic in the case of technology, since they are characteristics of people, but material artifacts and technologies - especially persuasive ones - are capable of forming intentions in human beings thanks to technological mediation (Verbeek, 2006c).

Philosopher Peter Paul Verbeek has studied these aspects in depth and considers technological persuasion as a specific manifestation of technological mediation, a concept he defines as the "ways in which technologies, inevitably and often implicitly, help to shape human actions and perceptions by establishing relations between users and their environment" (Verbeek, 2006a, p. 3). Furthermore, Verbeek emphasizes that "technological artifacts are not neutral intermediaries, but rather "actively coshapes people's being in the world: their perceptions and actions, experience and existence" (2006b, p. 364).

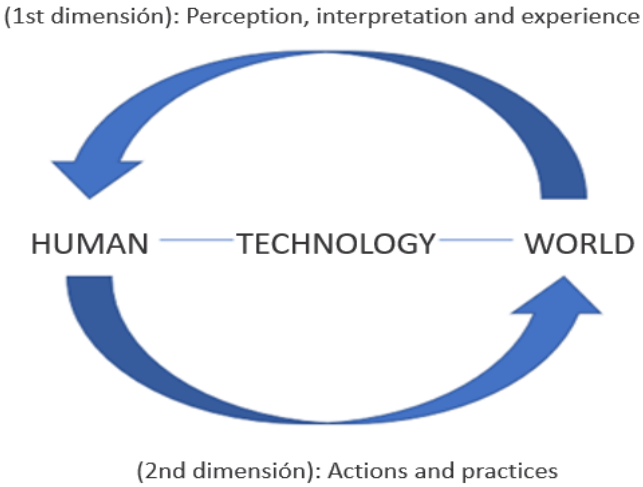

Figure 2. Dimensions of technological mediation (based on Verbeek, 2006a)

In any case, various gamification scholars have investigated this vision of technological morality with its limits and nuances. Sicart (2015) states that "technologies embody moral values (…) Technology, then, can mediate morality (…) but we practice morality" (p. 232). Likewise, Versteeg (2013) highlights that " Technology has a moral dimension (…) as it can exert influence over moral decision-making. However, it is not morally responsible in the way a human moral actor is" (p. 27). Indeed, there is a certain degree of morality in technology, but only human beings are responsible for their actions, as would be the case for creating and using persuasive technologies.

The role that moral agents and artificial agents play in these persuasive processes, as well as the degree of responsibility that each of them must assume, is a matter of debate, since the autonomy of decisions and the intentionality of actions is essential, but the latter is only attributable to people.

During technological mediation, human beings intervene with two different roles: on the one hand, as people who create technologies (designers) and, on the other hand, as people who use them (users). From this it follows that humans themselves (in their role as creators) are the ones who provide technologies with a certain intentionality (Verbeek, 2014). Consequently, and once it has been ruled out that artificial agents are morally responsible (Floridi and Sanders, 2004), the issue of moral responsibility would be solved with its distribution between designers and users. In the words of Verbeek (2006b), " The mediating role of technologies is not only the result of the activities of the designers, who (…) delegate responsibilities, but also depends on the users, who interpret and appropriate technologies" (p. 372).

However, there is a certain consensus that the responsibility of the designer of persuasive technologies and gamified projects will always be greater, since he or she takes the initiative to influence his or her future users in one way or another and they may find themselves defenseless against these technologies, beacuse of different reasons and circumstances that we have pointed out (Fogg, 2003). For Versteeg (2013) "the balance of moral responsibility tips slightly towards the side of the designers, as they are the ones that aim to persuade (...) Furthermore, the designer is the one who has the first opportunity to ethically reflect upon the design in-progress" (p. 27). Other researchers

such as Berdichevsky and Neunschwander (1999) agree that both -persuader and persuaded or, in this case, user and developer- have a shared responsibility.

Likewise, it is important to take into account the helplessness that some people suffer in the face of these new technological developments and the consequences of their use, since:

> The user interacts with digital products or services whose characteristics he does not know well, and which he will probably never be able to know well, due to their technical complexities (...). The vast majority of people do not have the means to identify the risks that digital technologies present, much less to protect themselves from them. Hence, ethics and regulations are necessary in the various stages of its design, manufacturing and use (Argandoña, 2019b, para. 4).

Beyond the topic of the neutrality of technology from certain paradigms (as pointed out by Sanmartín, 1990) or the fallacy of considering technologies as neutral (Bellver, 2017), including the vision of gamification not as something good or bad but only as a tool (Marczewski, 2017; Alter, 2017), these issues become even more complex in the current context, since gamification can be used to manage the actions of contemporary men and women. For this reason, we consider that technology can never be neutral, much less in the case of persuasive and playful technologies that manifestly seek to influence human beings, their behavior, their opinions, their conception of themselves and the world around them.

Evgeny Morozov, one of the most critical voices of gamification, considers it very superficial to present it as the salvation to all problems without mentioning that: "games are not neutral tools for getting things done but incentive schemes that might be transforming the gamers" (Morozov, 2013, p. 309). These incentive systems contain playful elements that are exported from video games to gamification (Werbach and Hunter, 2012): points, badges, levels, challenges, rankings, etc.

6. Conclusions

Today's entertainment society (Martínez López, 2011) embraces gamification as a motivating tool in several sectors (educational, business, health), configuring an authentic gameful world (Walz and Deterding, 2015) where playfulness runs away to everyday life.

Within this panorama of rapid technological advances, some voices of authority such as Langdon Winner and Günther Anders warn of the consequences of the thoughtless adoption of new technologies. Anders (1980) uses the “myth of Prometheus” to talk about the unwanted effects of innovation and the lack of accountability and considers, like Hottois (1990), that dehumanization is one of the risks that technology entails if we lose what makes us truly humans by uncritically accepting that certain developments are necessary progress.

For his part, Winner (1977) considers that technology is autonomous in the sense that it escapes human control and has unforeseen and negative consequences when maxims such as the “technological imperative” are applied. In his work he affirms that technology is a political phenomenon and a way of life endowed with values, so the responsibility for the creation of artifacts must be raised prior to their use -already in the design phases- (Winner, 1986).

Both researchers (Winner, 1977; Anders, 1980) believe that technology is not morally neutral and highlight responsibility with society and future generations as something

very relevant in this issue, that it is also applicable to gamified systems as an emerging technology.

Moreover, opposite positions are generated, from the enthusiastic application of the "technological imperative" (Queraltó, 2003) to the most absolute rejection; but there are also other visions. For example, Hottois (1990) advocates a third way and his perspective on Bioethics can serve -by analogy- as an approach to the ethical dimension of persuasive technology and gamification. This third way is not located at the extremes, but rather aims to moderate technological progress through intermediate solutions based on certain conditions, although the problem is precisely how to delimit these conditions.

In our case, it involves exploring the application of the main ethical traditions to gamification to determine the morality of gamified systems based on the means used, the results obtained and the predominant values or motivations (Versteeg, 2013; Kim and Werbach, 2016; Roper and Thorpe, 2017; Berdichevsky and Neuenschwander, 1999). In this sense, our previous research concludes that there is a dominant ethical view in gamification (the Utilitarianism) and another emerging one (Virtue ethics), while deontology has a timid presence and has yet to be adequately explored, in accordance to Marco and Moya (2022).

According to Hottois (1990), the 'middle way' is the one that offers the greatest advantages for selecting what is technically prudent and avoiding dehumanization, that is, the risk of losing what makes us truly human due to the lack of reflection on the use of technology. Indeed, nowadays as in no previous era, the hability of being prudent and responsible focuses ethical reflection. This concern denotes the need for a proactive attitude to protect humanity against certain traditions that uncritically raise the flag of technological progress, laissez faire or the total deregulation of technologies. Since there is still no specific legislation referring to gamification (Erenli, 2014), some contributions propose unifying several currents of ethical thought that can help to control its possible negative effects. In this sense, recent research advocates self-regulation of gamification with not only an extrinsic but also an intrinsic perspective (Moya, 2023).

It is a fact that technological systems cannot exist without human beings, since technology is created by and for people, affecting all spheres of life, causing new conflicts and establishing its own rules of the game. According to Queraltó (2003), the most repeated criticism against technologization is the depersonalization of postmodern men and women. In fact, if technology is making us less human, it is because we are beginning to consider our fellow human beings as means that serve some end. This objectification or instrumentalization, using people as objects, strips them of their humanity.

Therefore, putting every person at the center of technological development brings us back to the importance of ethics, to avoid the moral problems associated with gamification, which are the following: not respecting the autonomy and privacy of users, creating the obligation to use the technological system, generate physical or psychological harm to people, cause obsessive behavior and dependence, generate an excessive competitiveness and impulsivity, manipulate and exploit people, generate isolation and distraction, take advantage of technological ignorance, immaturity or fascination with the technology of vulnerable groups (affecting their character and decision-making), treating users unfairly or disrespectfully (infantilization or objectification), demotivating in the long term (by abusing extrinsic motivators and undermining intrinsic motivation) and not giving account by developers (Moya 2023).

To sum up, we want to highlight a series of conclusions from our work:

Firstly, we affirm that gamification is a valuable example of persuasive technology, as a clear exponent of the entertainment society (Martínez López, 2011), since it presents the seven characteristics of persuasion defined by Fogg (2003): reduction, tunneling, customization, suggestion, self-monitoring, surveillance and conditioning.

Secondly, we found that there is an inevitable connection between ethics and gamification derived from its aim of modifying human behavior. The real purpose of gamification will depend on each specific case, on the intentionality of its creators and their underlying idea of what a person is, whether or not they respect the user, their freedom, their autonomy and their dignity or if they are used as a means to achieve some end or purpose (such as maximizing benefits, maximizing desires, obtaining personal data, etc.).

Thirdly, we consider that for persuasive gamification developments and projects can be called ethical, an exercise of self-regulation is required by the moral actors involved in these ludic processes, particularly their designers, since they are the ones who have a greater responsibility because they decide to start the persuasive process (Moya, 2023).

Finally, we assert that the manipulative risk of gamification exists and, in this sense, the contributions of this work represents a first step to achieve gamification systems that persuade in an ethical way.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable. This study has not involved humans or animals.

Conflicts of Interest: The author declare no conflict of interest

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