A Conceptual Model for the Study of Persuasive Games

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ABSTRACT
In this paper I propose a new theory for the study of persuasiveness within digital games. This theory aims to make visible how persuasiveness can be structured within digital games and to be useful to identify specific aspects of games' persuasiveness that might not be obvious to the naked eye, by giving them order and conferring them intelligibility.

The theory that I propose here is based on the hypothesis that multiple persuasive dimensions can be used within digital games to convey persuasive messages. In order to defend this hypothesis I introduce the concept of 'persuasive structures', which I use to describe how persuasive communication works within digital games. The definition of this concept relies on a conceptual model that is based on the proposition that persuasiveness within digital games can be developed through three different persuasive levels and that in each of the three persuasive levels it is possible to find different persuasive dimensions.

Keywords
persuasive games, persuasive games, persuasive structures, conceptual model

INTRODUCTION
Any message that is aimed to shape, reinforce or change the perceptions, emotions, beliefs, behavioral intentions and behaviors is considered persuasive communication (Miller, 2002, p. 7). Therefore, the purpose of persuasive games is to convey persuasive messages that intentionally aim to affect the responses of another or others.

The study of persuasive communication began in Ancient Greece and has a history of more than two millennia. Early scholars Plato and Aristotle framed rhetoric as a technique for oral persuasion, which was followed by notable Roman scholars Quintillian and Cicero. It was Cicero who described rhetoric as a "speech designed to persuade" (quoted in Burke, 1969, p. 49). A few centuries later the development of mass media facilitated the broadening of the concept of rhetoric beyond oratory.

Although the focus of the study of persuasive communication has been overwhelmingly focused on verbal strategies, the development of film, television and visual advertisement have favored the expansion of the term. The philosopher Kenneth Burke (1987-1993) was the first to acknowledge the persuasive potential of nonverbal domains. “Wherever there is persuasion,” he wrote, “there is rhetoric. And wherever there is ‘meaning,’ there is

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‘persuasion.’” (Burke, 1969, p. 172). The work of Burke gave rise to the study of persuasiveness in other domains, increasing interest in visual rhetoric, understood as the art of using imagery and visual representation persuasively. A significant contribution to this field comes from Roland Barthes' essay "Rhetoric of the Image" (Barthes, 1977), which provides insight into the way advertising images may contain meaning. However, although the study of visual rhetoric has served to understand the persuasive potential of many nonverbal domains, game scholars (Bogost, 2007; Ferrari, 2010; Heide & Nørholm, 2009) have identified unique properties of digital games that deserve special attention in order to understand the way they convey meaning.

In the book *Persuasive Games: The Expressive Power of Videogames*, Ian Bogost argues that as procedural environments, digital games open up a new domain for persuasion (2007: preface viii). Bogost claims that digital games are not "characterized by their ability to carry images, but by their capacity for operationalizing rules" (2007, p. 171) and defines the term procedural rhetoric with the remit of explaining what he identifies as the "unique persuasive powers" (2007, p. preface ix) of digital games and the way they mount arguments and influence players. Bogost calls procedural rhetoric "the art of persuasion through rule-based representations and interactions rather than the spoken word, writing, images or moving pictures" (2007, p. preface ix).

However, although Bogost's statements on procedural rhetoric are really useful to understand the way arguments can be embedded in the rules of a digital game, the procedural nature of digital games is not the only characteristic of them that can be used to convey persuasive messages. The purpose of this paper is to understand how other persuasive dimensions can complement procedural rhetoric with the objective of persuade players through digital games. This paper is part of a PhD project aimed to broaden the understanding of persuasiveness within digital games in which I propose a new theory for the study of persuasiveness within digital games. Due to space restrictions this paper will focus on presenting the theory and the main important aspects related to it.

PERSUASIVE STRUCTURES IN PERSUASIVE GAMES

I propose using the concept of persuasive structures of persuasive games to defend that persuasiveness within digital games is the result of the relationships established between multiple persuasive dimensions. Furthermore, the concept of persuasive structures takes into consideration the importance of players' performance in their interpretation of the persuasive message conveyed through digital games.

In order to explain how persuasive structures can be conceptualized, designed and executed within digital games, I start this section by defining how digital games convey meaning. This will allow me to introduce a conceptual model that is based on my hypothesis that multiple persuasive dimensions interact with each other within digital games resulting in what I call persuasive structures. This conceptual model, which I complement with a visual diagram, aims to define how these relationships between persuasive dimensions are established within digital games, and thus facilitates their study and conceptualization.

In order to explain how digital games convey meaning Salen and Zimmerman refer to semiotic principles to explain that players make meaning when they interpret a series of signs within a system to establish relationships between them. Furthermore, the authors explain that the context in which these signs are interpreted affects the way the player makes sense of them (Salen & Zimmerman, 2004, p.364).

Semiotics understands a sign as the whole that results from the association of the signifier i.e. the form the sign takes, with the signified i.e. the concept it represents (Saussure, 1983, p. 67). The relationship between the signifier and the signified is referred to as signification. The term signification alludes to "the particular thoughts and responses that a sign evokes" (Beasley & Danesi, 2002, p. 43). In persuasive games, it is possible to find visual, sound, linguistic and haptic representations, which become signs only when invested with meaning (Pierce, 1931-58, p. 2.172). A persuasive game can contain thousands of individual signs that function not through their intrinsic value but through their relative position to other signs (Saussure, 1983: 177). Therefore, in order to become meaningful, signs need a system that establishes relationships between them.

The rules of the game have an important role in establishing relationships between the signs within persuasive games, as they are the responsible for guiding players through the game. Despite Salen and Zimmerman state that relationships between signs in digital games are established only by the rules of the game (2004, p.364), I claim that there are other two aspects of digital games that establish relationships between signs: the narrative and the cinematic treatment of the audiovisual contents.

Furthermore, the meaning of the game only emerges when the player interacts with the signs of the system within a specific context. It follows that the context can affect the way the player interprets the signs: enhancing, distorting or even radically altering the intended meaning (Salen & Zimmerman, 2004, p. 364). This is because players tend to interpret signs not for what they are, but what they mean to them in certain contexts, or, what they want these signs to mean to them at the very moment they center their attention on them (Walz, 2003, p. 196). Consequently, contexts are created by specific cognitive frames, in other words, the way players organize how they look at the world. Accordingly, cognitive frames are responsible for establishing a relationship between the artificial world of the game and real life.

Cognitive frames can be influenced by the personal circumstances and beliefs the player has when he plays the persuasive game, but also can be generated within the frame of the game by the use of metacommunication (Salen & Zimmerman, 2004, p. 368). In this context, metacommunication is understood as the capacity of persuasive games to influence players' attitudes towards the feelings or emotions aroused within the game (Bateson, 2006, p. 315). Therefore, persuasive games have the capacity to generate cognitive frames that influence the perceptions and beliefs of the player not only in the game world, but also in the real life context that it intersects. I claim that these cognitive frameworks can be designed (1) by arousing feelings, (2) by arousing emotions, (3) by delivering intellectual challenges that engage them through surprise, intrigue and provocation, and/or (4) by encouraging players to establish relationships with other players.

On the whole, building persuasive structures for persuasive games consists of designing a game world filled with visual, linguistic, haptic and/or sonic signs that become meaningful from a persuasive perspective when players interact with them, guided by the rules of the game, the storyline and/or the cinematic treatment of the audiovisual contents. Furthermore, players' interpretation can be influenced by the use of metacommunication within the game by arousing feelings, by arousing emotions, by delivering intellectual challenges that engage them through surprise, intrigue and provocation; and/or by encouraging players to establish relationships with other players.

According to this, I claim that persuasive games convey meaning through three different levels of persuasion: the representational world, the system and the context. Furthermore, in each level of persuasion it is possible to identify a series of persuasive dimensions. Previously I have identified four types of signs that can be found within the representational world of digital games that each corresponds to a mode of communication: visual signs, sonic signs and linguistic signs and haptic signs. When a group of signs of the representational world are manipulated to become persuasive, they become a persuasive dimension. Therefore, it is possible to find four persuasive dimensions within the representational world: visual persuasion, sonic persuasion, linguistic persuasion and haptic persuasion.

Besides this, previously I have identified three aspects of digital games that are able to establish relationships between the signs of the first level of persuasion: the rules of the game, the narrative of the game and the audiovisual treatment of the audiovisual contents of the game. Consequently, it is possible to find three persuasive dimensions in the second level of persuasion: procedural persuasion, narrative persuasion and cinematic persuasion.

Finally, I have previously identified four ways to generate cognitive frames within persuasive games: by (1) arousing feelings, (2) by arousing emotions, (3) by delivering intellectual challenges that engage them through surprise, intrigue and provocation, and/or (4) by encouraging players to establish relationships with other players. Therefore, is possible to find four persuasive dimensions in this level of persuasion: social persuasion, tactical persuasion, affective persuasion, and sensorial persuasion.

In sum, persuasive dimensions can be built within persuasive games making use of eleven persuasive dimensions distributed through three levels of persuasion. The objective of identifying all the persuasive dimensions that can be used within digital games to persuade players is to facilitate the study and design of persuasive structures for

persuasive games. It must be noted however that when playing the persuasive game, players are not persuaded by each of these dimensions in isolation, but are persuaded by the relationships established between all of them while playing the game.

Furthermore, the fact that persuasive games can make use of eleven persuasive dimensions does not mean that all persuasive games need to contain all of them in order to be effective. The pertinence of the use of each of the persuasive dimensions will depend on the persuasive goals and the game goals. The other five aforementioned factors that determine the conceptualization of creative strategies for persuasive games will also determine the persuasive dimensions which are helpful to convey the persuasive message. In the next section I analyze in depth each of the persuasive dimensions that can be used within digital games and how they can be used to persuade players.

VISUALIZATION OF PERSUASIVE STRUCTURES WITHIN PERSUASIVE GAMES

In order to facilitate the analysis and conceptualization of persuasive structures for persuasive games, I propose to represent this conceptual model making use of a visual diagram (see Figure 1). Once the conceptual model is understood the visual diagram can serve to quickly guide both the study and design of persuasive structures of persuasive games. Furthermore, the visual diagram can also provide information about the persuasive structures of persuasive games that can be immediately understood by others who also understand the diagram.

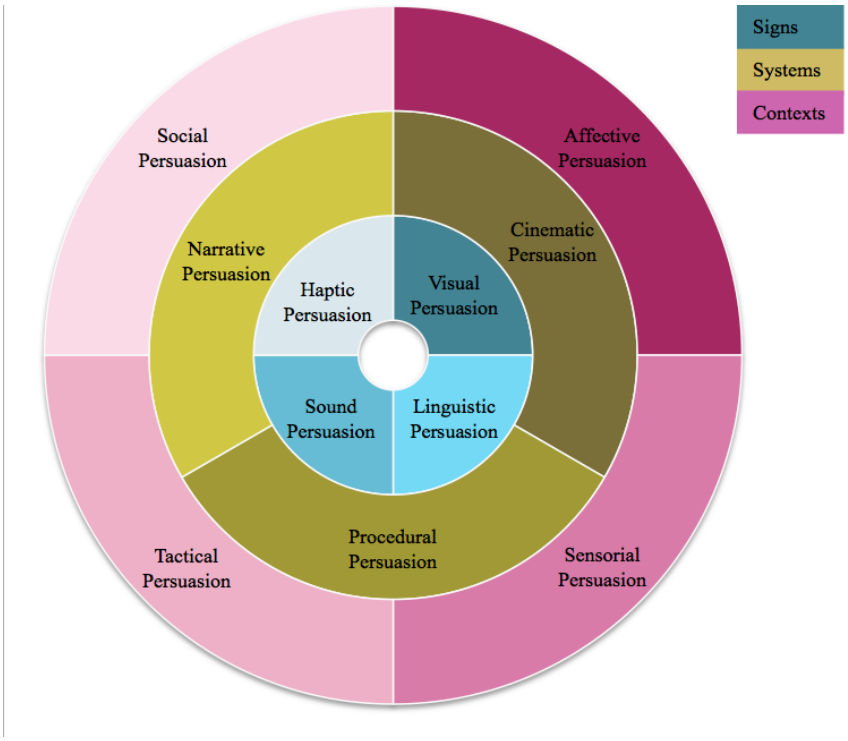

Figure 1. Visual model for the analysis and design of persuasive games' persuasive structures

The diagram consists of three concentric rings that correspond to three levels of persuasion: the first level corresponds to the representational world, the second level corresponds to the system, and the third level corresponds to the context. In each of the rings the persuasive dimensions corresponding to each level of persuasion are represented. The internal ring corresponds to the first level of persuasion and, consequently, holds the persuasive dimensions that can be found within the representational world that contain the signs which can be interpreted by the player. These are visual persuasion, linguistic persuasion, sonic persuasion and haptic persuasion. Secondly, the middle ring of the diagram corresponds to the second level of persuasion and, consequently, holds the persuasive dimensions that help the player to establish relationships between the signs of the first level, thus guiding his interpretation. These are procedural persuasion, narrative persuasion and cinematic persuasion. Finally, the third ring of the diagram corresponds to the third level of persuasion and, consequently, holds the persuasive dimensions able to generate cognitive frames that result in contexts that affect how players interpret the game, namely, sensorial persuasion, affective persuasion, tactical persuasion and social persuasion.

In conclusion, the conceptual model presented in this section can be used to make an in-depth analysis of persuasiveness within digital games. Making use of this conceptual model, the analysis can be organized attending to the different levels of persuasion and the different persuasive dimensions. This allows problems in the design of persuasive structures, or successful strategies, to be identified. The conceptual model also facilitates comparative studies that can be used to identify tendencies or to highlight differences in the use of digital games as media for persuasion. Finally, this conceptual model can guide the process of designing persuasive structures for persuasive games. In the design process, the model can be used by designers to focus their attention on each of the persuasive dimensions one by one, and to decide how to establish relationships between them.

PERSUASIVE DIMENSIONS IN PERSUASIVE GAMES

Persuasive Dimensions of the Representational World

Persuasive dimensions of the representational world refers to the groups of signs of the same nature that can be loaded with meaning by advertisers and interpreted by the player. I have previously stated that in persuasive games, it is possible to find linguistic, visual, sonic and haptic representations which become signs when invested with meaning. Therefore, attending to the representational mode of signs, the persuasive dimensions of the representational world are: linguistic persuasion, visual persuasion, sonic persuasion, and haptic persuasion.

Linguistic Persuasion

When I refer to linguistic persuasion I am focusing my attention on how persuasive games can communicate meaning with pieces of language. It follows that linguistic persuasion is concerned with semantics, i.e. how meaning is inferred from words and concepts (Saeed, 2003, p. 2). I have identified that linguistic persuasion can be used within persuasive games in at least: (1) the name of the game, (2) instructional texts, (3) narrative texts, (4) interface commands, (5) dialogs of characters, (5) names of characters, (6) names of objects and (7) names of spatial locations.

As signs, words in the form of nouns, pronouns or adjectives can represent concrete or abstract objects, physical or mental actions, or qualities (which may be called attributes,

properties or features). Linguistic signs within persuasive games can not only be used to convey information throughout their denotative meaning, i.e. their literal or explicit meaning, but also can be used to manipulate how meaning is interpreted throughout their connotative meaning, i.e. the cultural meanings that become attached to them (Berger, 2004: 16).

Furthermore, the interpretation of linguistic signs within persuasive games not only depends on the interpretation of isolated signs but also on the relationships established between them and other signs present in the game, either other linguistic signs or signs of a different nature. The relationship between linguistic signs can be established within the linguistic persuasive dimension of persuasive games by words in the form of prepositions, demonstratives or conjunctions (Hipkiss, 1995, Introduction ix). The relationship between linguistic signs may result in arguments or emotional appeals that can guide players' interpretation. Furthermore, the relationships established between linguistic signs and signs of different nature may have consequences for the way players interpret them. In this section I only focus on relationships established between linguistic signs because other types of relationships are analyzed in further sections.

When using linguistic persuasion within digital games it is also important to consider how the context can evoke different responses in those who hear or read the texts (Hipkiss, 1995, Introduction ix). Therefore, linguistic persuasion is also concerned with pragmatics, which studies the ways in which context can contribute to the interpretation of a linguistic message.

Visual Persuasion

When I refer to visual persuasion I am focusing on how persuasive games can communicate meaning with visual representations within persuasive games. Numerous scholars have studied how visual persuasion can work in media other than digital games (Barthes, 1977; Forceville, 1996; Kennedy, 1982; Whittock). Drawing upon such studies I assume that it is possible to consider that the visual patterns identified by these scholars can be applied within persuasive games to persuade players. My own view is that visual persuasion is characterized by a process in which the visual representations function as cues that evoke intended meanings, premises and lines of reasoning. The power of visual persuasion lies in the ability of visual representations to convey meaning through visual iconic, symbolic or indexical signs (Kjeldsen, 2012, p. 240) .

Visual persuasion within persuasive games may draw upon four persuasive qualities of visual representation (Kjeldsen, 2012, p. 240-241): presence, the capacity to make present to players something that is useful to support persuasive claims; realism, the capacity to present something "as though it is reality itself"; immediacy, the property of visual representation to be perceived and understood in a brief instant; and semantic condensation, the capacity of condensing several ideas, thoughts or contents into one image.

However, visual representations within persuasive games can become polysemous, thus implying "subjacent to its signifiers, a 'floating chain' of signifiers of which the reader can select some and ignore the rest" (Barthes, 1977: 28). Therefore, players may need certain directions to be able to interpret the intended meaning. The relationships established between visual signs and signs of other nature can be used within persuasive games to guide players' interpretation of visual signs. Besides, this interpretation can be enabled through visual rhetorical figures. The most common types of visual rhetorical figures

used in visual persuasion are: metaphor, metonymy, synecdoche, hyperbole and ellipsis. Furthermore, players' interpretation can be also guided by the use of codes that users understand from their previous experiences. In this sense, the manipulation of lightning, color and perspective have an important role to persuade players through visual representations.

I have identified that visual persuasion can be used within persuasive games in: (1) interface design, (2) character design, (3) objects design, (4) spatial design, and (5) splash or menu screens.

Sonic Persuasion

When I refer to sonic persuasion I am focusing my attention on how persuasive games can communicate meaning with the selection, generation, recording, distortion, amplification and mixing of sounds. The types of sound considered in this section are music, noise and silence. The sonic treatment of the linguistic sound will also be considered but the content will not be analysed. The use of these four types of sounds can have an expressive function in digital games that can be analyzed in terms of persuasion.

In order to understand how sonic persuasion works within persuasive games is it important to comprehend how players listen to sounds, and how interaction can influence how players interpret them. Listening to sounds consists not only in hearing them but also on consciously focusing on them (Collins, 2013, p. 4). Players can gather information from sounds that they hear by casual listening and reduced listening. Casual listening refers to "the act of focusing on or recognizing the cause or source of the sound" (Chion, 1994, p. 28). From listening to sounds, players can recognize where they come from or what type of object is making them, for example. Reduced listening is the capacity of players to gather information from the traits of the sound, such as its quality or its timbre.

The information gathered by players through casual and reduced listening may be interpreted by semantic listening (Chion, 1994, p. 28). Therefore, semantic listening is the ability of players to interpret a message in a sound by listening to it. It follows that, taking advantage of players' abilities to gather and interpret information from sounds, persuasive games can persuade players through sonic persuasion.

Besides this, it is important to note that, due to the interactive nature of persuasive games, the way players trigger sound events in the game depends on their performance. In this regard, sonic persuasion should consider the expressive capacity of interactive audio and adaptive audio. Interactive audio groups those sound events that are the result of a player's direct input, while adaptive audio groups those sound events that that are introduced reacting to different game states (Collins, 2008, p. 4).

I have identified that sonic persuasion can be used within persuasive games in at least: (1) interface sounds, (2) sound effects, and (3) ambient sound beds.

Haptic Persuasion

When I refer to haptic persuasion I am focusing my attention on how persuasive games can communicate meaning with any form of nonverbal communication involving touch, which is only perceived when it is experienced. Haptic persuasion deals with how players construct meaning through their bodily and mental performance, which may generate new signs or modify existing ones (Frasca, 2007: 198). Therefore, it is directly related with interactive activities in games.

Although semiotics includes anything which could be termed communication, the fact is that the study of physical contact has been only slightly explored by semioticians (McGee & Harup, 2003: 69). In his Ph.D. dissertation Play the Message. Play, Game and Videogame Rhetoric (2007), Frasca explores how the haptic system is involved in the creation and interpretation of meaning within play activities. The author states that "forcing the player to exaggerate his physical performance is the equivalent of a rhetorical figure" in the haptic level (2007: 150).

It is possible to find haptic icons, indexes and symbols within persuasive games that can be designed to persuade players through the relationships established between them and other signs.

Persuasive Dimensions of the System

Narrative Persuasion

In order to understand how narrative persuasion can work within persuasive games, it is necessary to distinguish between scripted narrative, the "narrative content and structures that have been written by the designers", and the alterbiography, "the narrative generated during the gameplay" (Calleja, 2009: 4). Both scripted narrative and alterbiography depend on four narrative elements: (1) the story, (2) the space, (3) the time and (4) the characters. However, whilst the main plot and secondary plots of scripted narrative are written by designers, plots of alterbiography result from players' performance. Therefore, besides the four narrative elements mentioned, alterbiography also depends on the interaction of the player with the rules of the game (Calleja, 2009: 5). The resultant narrative from the interaction of the player with the rules is "a combination of rules, representations and imagination" (2009: 7).

The first element of the narrative that can be manipulated to persuade players is the story. The story of a game is the chronological order of its events. Narrative games, namely games in which the story plays a significant role, contain a "scripted succession of events that the player has to perform in a specific order" (Egentfeldt Nielsen, Heide Smith, & Pajares Tosca, 2008: 172). Although not all games require a scripted story, most of them are much improved by the addition of one, and the importance of the story increases as the complexity of the game does (Rollings & Adams, 2003: 91-92).

The story of a game can be useful to persuade players because it can be used to reduce players' resistance to persuasive messages and to reduce cognitive loads in complex games. Furthermore, counterarguing may also be inhibited by narrative because arguments might not be noticed by players until it is too late (Dal Cin, Zanna, & Fong, 2004, p. 178). Besides this, it has been demonstrated that narrative persuasion "lead[s] to belief changes that resist counterinfluence and that persist longer over time" (Green & Brock, 2002, p. 336).

The second group of elements of the narrative that can be manipulated to persuade players are the characters. The characters can have an important role not just in their functions in a game's scripted story, but also by themselves in a game, either with or without scripted story. Moreover, the revolution offered by digital games is that the players can act as characters themselves, and they can expect reactions from their own actions (Egentfeldt Nielsen et al., 2008: 178). This fact induces psychological empathy with the character, which increases player's feeling of identification with it (Lee, Jin, Park, & Kang, 2009: 30).

The third element of the narrative that can be manipulated to persuade players is the space. The space is a narrative element that has meaningful functions in both scripted narrative and alterbiography. The space is important for scripted narrative because actions take place in the space and it contains the characters of the story. Furthermore, it is important for alterbiography because game spaces can be transformed by the user at the same time that the story is being constructed. In those games in which there is no scripted narrative or its presence is minimal, a combination of spatial, temporal and thematic mapping can be used to construct a *storyspace* that can be explored by the player, resulting in a non-linear and personal storyline (Bruckman, 1990: 1). Accordingly, the media scholar Henry Jenkins states that game designers should be considered narrative architects more than storytellers (2004: 13).

In regards to the relation between play time and event time it is possible to identify two parameters related to time as a narrative element that can be used with persuasive intentions but that can be also altered by the player, namely the order and the duration (Chatman, 1990: 65; Moreno, 2002). The game designer has the possibility of influencing the order of the actions in the game through flashbacks and flashforwards. Whilst in a normal sequence the story and the discourse have the same order, in an asynchronous sequence the order of the actions of the discourse do not correspond to the order in the story. The duration is the relation between the time needed to experience the story and the duration of the events of the story. In digital games the story is defined by the player's performance. Thus in most cases it will result in impure diegesis, in other words, the two will not coincide. As with space, temporal organization of events in games also facilitates non-linear engaging narratives that can be translated into strategies to persuade players (Bruckman, 1990: 2-5).

Procedural Persuasion

Procedural persuasion refers to the interpretations addressed by the rules of the persuasive game between visual, haptic, sonic and linguistic representations which guide players' interpretation. Bogost defines the term procedural rhetoric as referring to "the art of persuasion through rule-based representations and interactions" (2007: preface ix). To be consistent with the approach of this paper, I refer to the use of the mechanics of the game with persuasive intentions as procedural persuasion, rather than persuasive rhetoric.

Game rules are a powerful tool for persuasion because they are usually loaded with conventions that the players interpret based on their previous experiences. Combined with game's interactivity, the game rules are key to making the game a performable experience, which differentiates persuasive games from other kind of persuasive contents. From a persuasive point of view, the rules of the game have the primordial function of guiding the player through the game and consequently have an important role in establishing relationships between the signs contained in the persuasive dimensions of the first level. Therefore, it is not only that the rules of the game can be interpreted themselves by the players, but, as a system, they also help players to interpret what they see, hear, read and feel.

There are at least four types of rules that can be manipulated to persuade players within persuasive games (Frasca, 2007: 118-119), these are: (1) model rules, which define how the playworld works, and therefore set the boundaries of the player's activity; (2) grade rules, which deal with any characteristic of the game that is measured within it, such as scores or energy levels; (3) goal rules, which define the stated aims that lead to victory

and defeat; and (4) metaruless, which define how the player can modify the game's rule system.

Cinematic Persuasion

The third and final aspect of digital games that can be used to establish relationships between the signs of the first level of persuasion is the cinematic treatment of the audiovisual contents of the persuasive game. It is important to highlight that with audiovisual contents I not only mean audiovisual pieces such as cutscenes, but that I refer to the cinematographic treatment of all the elements of the game. Accordingly, cinematic persuasion refers to the relationships established by the cinematography of the game between visual and sonic representations that guide players' interpretation of these signs or generate new ones. I have identified that cinematic persuasion within digital games can be executed by manipulating (1) framing, (2) camera movements, and (3) editing.

The framing of a scene is related to the position of the camera and the proportions of the objects that are within the frame. Framing is the result of camera position and camera angles which can be used with persuasive intentions within persuasive games by using codes which players know how to interpret, thanks to their previous experience (Newman, 2009, p. 92).

The camera position determines which elements are shown on the screen and how they are shown (Newman, 2009, p. 93). The two variables related to camera position that can be used to influence players' interpretation are the size of the objects shown on screen and the position of those objects. The size which objects are shown on screen is related to the importance given to them, whereas their position is related to the attention they are going to receive from players. According to the Rule of the Thirds the center of the screen is the major area of importance and therefore, the area that receives most attention from players (Newman, 2009, p. 94).

The selection of camera angles can be used with persuasive intentions within persuasive games to give certain meaning to a scene in the game by using codes that players know how to interpret thanks to their previous experience (Newman, 2009, p. 92). The pitch of the camera can be used to emphasize the hierarchy of elements in the scene. A low angle shot makes players feel more involved in the events of the scene but also arouses a feeling of submission, whereas the high angle shot gives players a feeling of dominance but a lower sense of involvement (Hawkins, 2005, p. 9). Camera angles can also determine the point of view of the player, shifting the perspective of the player from first person to third person, which also has consequences for involvement. Furthermore, the use of inclined or unexpected camera angles can intentionally generate feelings such as confusion, disorientation or mystery.

Another way to execute cinematic persuasion within persuasive games is by the use of camera movements, which can add to the excitement of a game by keeping the action in the frame. Camera movements can be employed in some way to influence players' interpretation by being used to shift their attention (Hawkins, 2005, p. 54).

Finally, editing refers to the arrangement of sequences of consecutive images. This includes continuity, juxtaposition and fragmentation. Editing can be used to make transitions between disparate locations or to move the story forward (Hawkins, 2005, p. 210-212). Editing can also be used with persuasive intentions within persuasive games by establishing relationships between signs and by making use of contrasts. The use of

contrasts in editing can serve to generate new signs through the relationships established with the their juxtaposition (Hawkins, 2005, p. 223).

Persuasive Dimensions of the Context

Sensorial Persuasion

Sensorial persuasion is aimed at the five individual senses (sight, hearing, taste, smell and touch) with the objective of triggering sensory experiences. Persuasive games' capacity to draw meaningful sensory experiences resides in their sensory breadth, which is the number of sensory dimensions simultaneously presented to the player within the game (Steuer, 1995, p.45).

Each of the different sensory dimensions presented to the player in a persuasive game has the potential to become meaningful. Visual elements can be used to deliver sight sense experiences. Sound elements can be used to provide hearing sense experiences and haptic elements can work with touch sense experiences. Smell and taste appear to be outside of the reach of persuasive games but they are not, because of the combination of the previously mentioned elements can deliver experiences that also stimulate those senses, as shown in the following example.

Affective Persuasion

The affective persuasive dimension stirs up the players' deeper feelings and emotions with the objective of triggering affective experiences that go from slightly positive feelings to strong emotions (Schmitt, 2000: 6). Therefore, affective persuasion can be used to generate cognitive frameworks that arouse emotions which players can link to the message conveyed. It follows that these emotions can influence players' behavior and choices outside of the game.

It has to be said here that the empathy and the attitude of the player will determine the effectiveness of this strategy. Additionally, to make this persuasive dimensions work properly it is necessary to have a good understanding of which stimuli cause concrete sensations. It is important therefore to differentiate between moods and emotions.

Moods are triggered by specific stimuli and can be misinterpreted by players because they are usually not aware which stimuli have caused them. After playing a persuasive game that has irritating background music, for example, players can think that they did not like the experience at all because they felt irritated during the gameplay, and they will probably associate that mood to the message conveyed within the game.

Emotions are intense affective states caused by something or someone that consumes our energy for some amount of time. It is possible to differentiate between two kinds of emotions: basic emotions and complex emotions. Basic emotions are the fundamentals of our emotional life and include emotions like happiness or sadness. These types of emotions are common to all human beings and the way of expressing them is similar in every culture. Complex emotions are combinations of basic emotions that can work differently depending on the culture.

Tactical Persuasion

This persuasive dimension aims to provide appealing experiences for creative players by delivering intellectual challenges that engage them through surprise, intrigue and provocation (Schmitt, 2000: 6). Tactical persuasion is directly related to tactical

involvement, the pleasure aroused by planning the strategies to follow in the game (Calleja, 2007, p. 89). Therefore, tactical persuasion can be used to motivate players by encouraging them to solve intellectual challenges, which can arouse feelings of confidence, control and power in them.

According to the psychologist Joy Paul Guilford, productive thinking can be divided into two types: convergent thinking and divergent thinking (in Schmitt, 2000: 12). Thinking experiences can be designed with one or both types. Convergent thinking is related with analytical reasoning and consists of a process in which the individual reaches a conclusion after analyzing information that has been provided or facilitated.

The second type of tactical persuasion is related with divergent thinking i.e. the intellectual process in which the individual looks for new and alternative answers that come from the information provided. Divergent thinking is linked with creative processes and can be used to motivate players by providing diversity and letting them express themselves.

Social Persuasion

This persuasive dimension aims to influence players' attitudes by delivering experiences focused on encouraging them to establish relationships with other people. Players can communicate with other players during the game session through chats, social media features, real time audio or video or in-game interaction, for example. Furthermore, players can voluntarily or unwittingly communicate with game designers during the game session through social features, registration forms, contact forms, email, chat or even with their own performance in the game. Persuasive games can make use of their nature as networked environments to increase player acquisition, virality and retention. Therefore, social persuasion can be used to work on persuasive games' visibility and playability.

Players can establish four different types of relationships while playing persuasive games, depending on different motivations (Subramani & Rajagopalan, 2003, p. 301-303): (1) players may want to establish relationships with other players, (2) players may want to make others aware about their achievements in the game, (3) players may want to recruit new players and (4) players may want to establish relationships to share information. It is possible to design persuasive strategies that encourage players to establish one or more of these five types of relationships between players. In order to make them work, it is important to consider the reasons that make players share their experiences or establish relationships with others while playing.

CONCUSIONS

In this paper I have presented a new theory in which I state that persuasiveness within persuasive games can be executed making use of eleven persuasive dimensions through three levels of persuasion. Furthermore, I have proposed to use the concept of persuasive structures to refer to the result of the relationships established between the eleven persuasive dimensions with the intention of conveying a persuasive message. I have complemented this theory with a visual diagram that serves to visualize persuasive structures in digital games and that can be used as a tool to facilitate their study and design. Finally I have explained in depth the persuasive potential of each of the eleven persuasive dimensions and how they can be used within persuasive games to persuade players.

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