Landmarks for the Contemporary Analysis of the Video Games

A new possible general scheme of analysis

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Abstract

Video games[1], as a contemporary cultural phenomenon, have drawn the attention of academic scholars, who decrypt them from a cultural perspective (what happens outside the game?) or as cultural object in itself (what happens inside the game?). Nowadays, video games are analysed from multiple research perspectives, such as the economic, political, social or technological, and are decoded with the help of aesthetics, popular culture, gender studies, production and reception studies (Aarseth, 2003; Wolf & Perron, Introduction, 2003; Wardrip-Fruin & Harrigan, 2006). Today's situation fundamentally differs from the one a decade ago, when the academic arena was dominated by the ideational debate known as ludology versus narratology. Yet, there are gaps in the specific literature, depicting a research field in its infancy ("game studies"). The objective of this analysis is to understand the dynamics of games studies in terms of methods and theories used (a critical literature review), and to propose a general scheme for analysing video games as cultural artefacts that may spot out some structures and content descriptors to be used for increasing the games' engagement. The applicability of the scheme of analysis is validated on two video games: DayZ and Heavy Rain.

Keywords: video games, ludology vs. narratology, game studies, game theory, engagement

Introduction

Historically, games have been used as study tools for other academic fields (philosophy, economy, military strategy), academic literature being rather lacunar in studies focused on the game itself. Several classic books, such as *Homo Ludens* (Huizinga 2012), *Man, Play and Game* (Caillois 1958) and *The Study of Games* (Avedon & Sutton-Smith 1971) represent the foundation for understanding games from diverse perspectives: sociological, anthropological, philosophical, ethnographical, cultural and aesthetic.

Although the recent tendency shows an interest towards hybrid theories, two trends that have dominated the academic discourse for over a decade, ludo- and narrato-centric, still mark the way video games are studied. The idea that video games are capable to possess a complex content, a structure and rhetoric, raises a conceptual confusion at the level of the object of study. The lack of a

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universally accepted definition and the research focus on one single element, excluding other items or even the potential relationship between them, lead to a short-sighted perspective, which may trigger conceptual ambiguities. The most common error occurs because of analysing games *in vitro*, without understanding or describing the connection with the players, the *game* being inseparable from the *gameplay*. In this respect, Rao (2011) notes that the methodologies used in the present day analyses do not take into account the structure design, but focus on the players' reaction to contextual experience.

Celia Pearce highlights the need for a specific theory of the video games. She starts from the premise that adopting an already existing theory from literature, film or television studies, while bringing some advantages, is in fact not enough because it cannot analyse the video games as distinct entities, but only apply its own theoretical and methodological frameworks (2006: 143). Pearce's arguments indicate the fact that the video games must be studied in a way that embraces the social and material experiences, especially in the gameplay context proposed by Zimmerman: the game is the expression of the system, an intrinsic part of it (2006: 159).

In these circumstances, the aim of present paper is to understand the dynamics of the analyses of video games in terms of methods and theories used in the present-day academic discourse, and to propose a general scheme for analysing video games as cultural artefacts, a scheme that may spot out some structures and content descriptors to be used for increasing the games' engagement. To build the analysis framework, this paper investigates the evolution of various approaches to video games and synthesizes the main theories and models of the contemporary video games analysis. The general scheme for analysing video games is inspired by theoretical frameworks proposed by Aarseth (1997) and Consalvo and Dutton (2006) and by the model of engagement and its attributes designed by O'Brien and Toms (2008), being built around eight topics of interest: interface study, narration, game goals, interaction maps, degree of (perceived) freedom, character and object structure, feedback. The validity of the proposed grid is supported by the opinion of a number of industry specialists, as stated during in-depth interviews (two former game designers, a realization manager and a narrative designer), and by the review of two successful video games: *DayZ* and *Heavy Rain*.

The video games theories. From the prisoner's dilemma to the dilemma of the magic circle

The first Theory of Games, proposed by Von Neuman and Morgastern (1944), is known as "the prisoner's dilemma". Although the focus is not on the games *per se*, it uses the game principle to better understand politics and diplomacy and for solving marketing problems or predicting the competitive behaviour (Herbig

1991). Yet, as Smith remarks, this theory can also be applied when studying video games, at a design level and for community management (Smith 2006). The creators of games use concepts such *zero-sum* or *non-zero sum game* to encourage certain types of behaviour and actions during the game. Salen and Zimmerman analyse video games as systems. They argue that the decision tree is equivalent to the formal space of possibilities in video games, being useful for mapping certain aspects of the game or as conceptual tool that constructs the formal structure of a video game (2004: 247).

The Theory of the Features (elements) of video games, embraced by ludologists, assumes that games are systems composed of elements that interact with each other, creating, as Salen & Zimmerman observe, a dynamic system, a whole (2004: 50- 54). In essence, this theory considers that the player produces an action to the system by accessing various elements of the interface, and that the system produces a reaction in return. The rules stretch between action and reaction, giving room to the players, while keeping the system intact as the "magic circle" of any games observed by Huizinga almost a century ago (Huizinga [1938]2010: 51). The paradox *rules - game* occurs due to the fact that rules are rigid, fixed, closed and unequivocal, while the game is associated with fun, improvisation and creativity. Rules are essentially restrictive, therefore they limit the actions of players and provide a structure out of which the gameplay and the game itself appear. Sicart emphasizes the importance of structure, arguing that it offers the very "container for the actions of players" (2009: 95).

A theory of the video games that marked the academic world is Bogost's Procedural Rhetoric (2007). He considers that video games work as a system, and he introduces the phrase "*procedural rhetoric*" in the academic discourse. The *procedural* stands for how to "process, explain or understand the processes" and the *rhetoric* captures "the convincing and the effective expression". Bogost concludes: "the procedural rhetoric is a technique for making arguments with computational systems and for unpacking computational arguments others have created" (2007: 2-3). Borrowing the "procedural" concept form Murray (1997: 71), Bogost claims that video games bring novelty in the relationship with other media due to their procedural characteristic, being able to be persuasive. He applies this theory on video games with potential influence on people (political games, advertgames and educational games), and suggests that rules are more important than the meaning (2007: ix). Although the procedural rhetoric helps academia to better understand some terms related with video games' ontology, this approach has its limitations: it excludes the players' contribution and creativity and it induces dangerous directions and unpropitious speculations (for example, if the influence would be so great, shooters would generate large-scale social problems). Sicart highlights in his article *Against Procedurality* the limit of the procedural rhetoric, showing that the meaning of video games is not produced directly by the

rules, but by the game being played (Sicart 2011). The professionals support this approach creating games for players: "games are adapted to a specific audience. Players' feedback is asked during the focus groups ran when working on a game" (Istrate 2014).

Other areas of interest, such as the semiotic models, gender, ideology or political messages also succeed to focus the scientific research on the messages and meanings of video games (Maietti 2004, Ferri 2007, Ferri, 2009). Out of these, the semiotic analysis difficultly arises, due to the fact that video games are different from one session to the next one, because it depends on the player's choices.

Sustained efforts of ludologists to minimize the importance of storytelling in video games or to split the narrative from video games cannot exclude the theory of video games narrative. With no intention to re-visit the presence, function, manifestation or characteristics of the narration in video games, the present paper needs to clarify the distinction between *being narrative* and *containing narrative*. This aspect is important because, as Ryan observes, there is not a "comprehensive and widely accepted theory of the importance of the medium as material support for the form and content of message" (2004: 22). The defensive reaction of ludologists (Eskelinen 2001, Frasca 2003, Aarseth 2004) failed to properly assess how the narrative model could have been adapted or how could it have been used as basis for a new model specific to video games. Much more objective, Ryan analyses the situation starting from the fact that narrative is not an end for video games but a means, helping the player to reach an objective. She argues, "[p]layers are usually too deeply absorbed in their task to reflect on the plot that they write through her actions" (2004: 349). Yet, with the narrative support, "people describe their sessions with computer games" (349), when discussing about the game, face to face or on forums, with other players, observers or with different discussions collaborators. Ryan admits that the narrative element is subordinated to the playing action, depending on the strategic game design (350). Cezar Vârtosu, realization manager, Ubisoft România, confirms this point of view:

> The basic mechanics is "dressed" in one form or another by the scriptwriter who creates the story. We have a design principle: *form follows function,* which means that the story of a game must be based on its functionality. Of course, it rarely happens vice versa: to start with a story and to create functional elements that support that story (Vârtosu 2014).

Therefore, the destiny of the game universe is created by the actions undertaken by the player, and not by how the narrative was built by the narrative manager. However, the narrative success of video games lies in "their ability to exploit the most fundamental of the forces that move a plot forward: the solving of problems" (Ryan 2004: 349). Thus, the active searches and the choices players make in accordance with the rules imposed by the game designer and with the frame

objects available in the game universe intervene in the narrative instrumentality. Denis James Ryan, narrative designer, Gameloft Romania, confirms that narrative experience brings

> a gratification to the players when it is in complete harmony with the whole game: with the rules, with the set-up, with the tone of voice, with the music and the audio-visual effects, with the characters etc. (Ryan 2015).

In 2012, Aarseth proposes *A narrative theory of games* (Aarseth 2012), distancing from the "old model" of opposing the story to the game: the clearer the story, the less game and *vice versa* (actually this has not been confirmed by practice, but on the contrary, has been infirmed by successful games such as *Mass Effect* (BioWare, 2007), *Heavy Rain* (Quantic Dream, 2010), *LA Noire* (Rockstar Games, 2011)). Aarseth explores the narrative elements proposed by Seymour Chatman (1978) in video games, and builds a spectrum (linear story, non-linear story, linear game, quest game and pure game) on which he marks the narrative kernels that can or cannot influence the gameplay. The result is an interesting model with four variables that depict the game on an ontological level (the universe, the objects, the agents and the events), between the ludic and the narrative poles. Aarseth validates his model by analysing five video games against Tolstoy's novel *War and Peace*. He concludes that the most important is the agent who initiates the action.

I consider that a clarification is necessary: the complexity and the richness of a character are not enough to guarantee the players' interest. As Laurel observes, using the Aristotelian definition of "virtue", a good character "*does* (action) what it *intends* to do (thought)" (Laurel 1991: 73). Even though the players develop relationships with the characters, with the avatars in which they project themselves, they are instruments only, used by the players to make their choices and perform their actions in the game. Modified like this, Aarseth's model is useful for understanding the limit between the communication authority (the game designer as game author) and the interaction with the players. This model allows a more thorough analysis, one which can investigate the particular ways in which the content of the game mobilizes the players.

The reviewed theories capture the video games from different points of view, some widely accepted, others attacked, some revised or improved because of the empirical findings, others reviewed from different angles or with other instruments. The major value brought by all these video games theories is that they allow a better and more detailed understanding of the overall video games field, and that they lead to the development of a discourse with its own terminology.

Contemporary models of analysis of video games

Scholars use basic video games elements, group their main characteristics and develop structural-functional analyses models with slight deviations. Focusing on the most typical characteristics of the video games, Aarseth suggests that the analysis must be oriented towards the triad structure, gameplay and the game universe (2003: 2). The game structure is based on rules and simulation; the gameplay studies the reasons and the strategies of the players, while the game universe shows the importance of the fictional context, the design typology, the used textures, etc.

The MDA model proposed by Hunicke, LeBlanc and Zubek takes into account the mechanics, the dynamics, and the aesthetics of the video games (Hunicke, et al. 2004: 2). In terms of aesthetics, the authors try to stay away from concepts such as *fun* or *gameplay*, proposing a taxonomy with eight components that can, all or just some of them, be identified in a specific game. Revolutionary when launched, the model proves to be difficult to apply on video game analyses mainly because of its terminology. For example, the industry overlaps the mechanics with the rules (Istrate 2014), while the *aesthetics*, as proposed by the authors, is very subjective, leading to equivocal interpretation (the authors themselves use approximations such as "exploration and discovery are *probably* (not marked in original text)…" (Hunicke et al. 2004: 4).

The TETRAD model for video game analyses is built by Schell around four factors: (1) technology, the least visible element, based on which the game is built (from codes to the interface); (2) aesthetics, depicted as sensorial experience of the player; (3) mechanics (rules and game devices); and (4) narrative, the story about what is happening during the game, from the beginning to the end of this (Schell 2008: 41).

The *Actions-Gameplay-Experience* (AGE) model emphasizes the player in its relationship with the game, bearing in mind the fact that the player's actions must be done by respecting some rules that lead to the gameplay (Dillon 2010). The AGE Model is only apparently easy, because it suggests that players can be engaged through emotions and common human instincts. Dillon completed later this model with the *6/11 Framework*, proposing six particular emotions and eleven instincts (Dillon 2011: 1-3). The AGE model is successfully used in empirical analyses (Bakker et al. 2011).

All reviewed models show the need for an easier scheme to be applied on video games analyses, for a simplified set of descriptors for the structures and the content that could be used both for better understanding the video games and for better developing them, with increased engagement.

Areas of interest for the development of a general scheme of analysis

Aarseth considers that the simple combination of the existing theories reduces new media to terms such as "interactive", "puzzle type" or "worlds", even though video games are "a unique aesthetic field of possibilities" (1997: 17).

Everything gravitating around the player and his or her choices brings into discussion the inter- and multi-disciplinary nature of video games. One of the theories that require taking a step into the psychology field, with its motivational, emotional and cognitive studies, is the Theory of the Gameplaying. Applying it in the video game analyses brings forth a major risk, on the one hand because of the impossibility of understanding and accumulating fast enough the theory and concepts of psychology, and, on the other hand, because of losing the focus exactly from the object of the analysis. To be sure that a scholar does not step out from the video games studies field, Järvinen proposes in his PhD thesis fewer elements to focus on: purposes, emotions and the reciprocity me-others (2007: 99). This may seem too simplistic because it disregards both players' motivation/engagement, and the rules, structure and the meaning of the video games. In this context, Moulthrop's observation needs to be recalled: the player manipulates complex systems in video games because of the configuration (2006: 63) and because of the feedback loops.

The four axes model for qualitative analyses of the video games proposed by Consalvo and Dutton (2006) helps understanding the gameplay experience. The model examines the choices that players have in relationship with the interaction with other characters, players or non-playing characters (NPC) and studies the behaviours triggered by the game universe in different situations, and the intertextuality of the game. The proposed axes focus on: object inventory, interface study, interaction map, gameplay log, all revolving around the interaction between players and the interface.

Due to the current technological evolution, interactivity is no longer specific for the video game, being used in many other industries (i.e., advertising). Yet, the differentiating factor for the video games, not yet embraced by other industries, is the feedback-based interactivity: the player is rewarded (points, time, resources, level up, etc.) or penalized (closing the game before ending it). Therefore, the feedback is a feature that must be included in the game experience analyses.

Inspired by the theoretical frameworks proposed by Aarseth (1997) and Consalvo and Dutton (2006), and by the model of engagement and its attributes designed by O'Brien & Toms (2008), I have synthesized a general scheme of analysis of video games as cultural artefact.

The Attribute	The object of investigation
Interface study	The game ecosystem and the aesthetic and sensorial appeal created by the graphical details
Narration	The story that triggers moral or ethical justifications on which the need of making choices, being built in the specific game spatial-temporal universe.
Game Goals	The general game goals (if any) and systemic goals that may generate players' choices.
Interaction Maps	The player's choices when interacting or not with the game objects such as: commands at players' disposal, out-of-the-game information that are given about the goals and missions of the games, clues that appear or helpers (other players or NPC).
Degree of (perceived) freedom	The degree of freedom that players have in the balance between user input and game rules.
Character and object structure	Characters and the system of objects exploration through emergent behaviours or situations and their influence on the players' choices and feelings.
Feedback	Any information (visual, acoustic or tactile) communicated to the players about: actions, type, frequency and scale of the rewards used by the game developer to motivate and to engage them with the challenges and choices in the game.
Game-playing	Any pre-requisite of prior experience, or if there are increasing challenges in proportion to game-playing skills.

Table 1 The general scheme for analysis and its topics of interest

As Table 1 particularizes, this general scheme of analysis is structured on eight topics of interest. Similar attributes have been brought into discussion during the face-to-face in-depth interviews with industry's professionals.

Validation for the general scheme of analysis

I have applied this grid for analysing two games that are influencing gamers' community and generate reactions from game designers: *DayZ* (Bohemia Interactive, 2013) and *Heavy Rain* (Quantic Dream, 2005). Both video games have been previously reviewed by specialized sites (www.gamasutra.com, www.gamesradar.com) and have been included in several academic studies (Soetaert, et al., 2011 (Backe & Aarseth, 2013) (Carter, et al., 2013) (Carter, 2015)). Yet, the added value of my analysis is a better understanding of the challenges raised by those games in terms of game design and story and of the triggers that engage players.

Comparing and assessing those games on each of the categories outlined in the scheme for analysis enabled me to search for design or story specifics that may or may not stimulate the players' engagement. The assessment of the interface shows differences in: graphical details, the genre of the film that served as source of inspiration, mood and background music, the level of body language and the emotional reactions useful for players to make decisions, the dialog boxes used for communicating with the players. The engagement is related to the entertainment value of experience which depends on how a player controls a game character (*DayZ*) or a number of characters (*Heavy Rain*). These characters have a history and a significant interaction with others, allowing players to gather "life experience" (while judging their characters' choices). The degree of agency over the character also influences, as Sicart suggests (2009), the scale of engagement.

From a narrative point of view, the games do not exclude antisocial materials (i.e. in *DayZ* killing is a vital part of the experience and the bandit behaviour is not restricted). On the contrary, they include it in a form that can be approached, reshaped or corrected if players choose to. The game designers did not encourage or reward advanced social relationships between strangers. In *DayZ* there is no decisive plot to be discovered, but it can be configured by the players. In the case of *Heavy Rain,* there is a plot, but the drama of the story is not clear until the end of the game, when the players are able to understand the whole story, including their own part in it. As Ryan demonstrates (2004: 349), the narrative success of the games lies in their ability to move the plot forward by solving problems. The difference between the assessed games resides in the problems tackled (own survival or saving someone else's life) and in the induced emotions (fears, trust, hope, hate, love, friendship). The immersion is stronger in the case of the first-person (FSP) mode (*DayZ*), that allows the player to internalize behaviours and feeling. In the case of switching from FSP to third-person perspective (*Heavy Rain*), because of multiple characters playing, the immersion and engagement are affected sometimes, since the protagonist does not always do what the player would have wanted him to do. For *Heavy Rain*'s degree of freedom, arguments state the fact that there are a reduced number of choices, always displayed on the screen like a "shopping-list", among which the players must choose. For *DayZ*, the formulaic elements, the clear mechanics, the open-story and open-options create for the players the feeling that they are making their own decisions even when AI (artificial intelligence) detects them and pulls them out from the free character status, obliging them to interact, to make decisions and choices. The challenges, including moral dilemmas, allow players to work on and to amplify their own feelings, beliefs and axiological values in a way that would be impossible in the real-world.

Feedback, as the information communicated to players about results they achieved or the choices or actions they have taken, is visual or auditory. The lack

of feedback for some actions can disturb attention and elicit question marks for the player. It may be the case of the lack of body language or emotional reactions of other characters, or the earned trophies only at the end of each chapter (*Heavy Rain*), and not in the very moment the player obtained it (health status in *DayZ*). Feedback is, as demonstrated by O'Brien and Toms (2008), a strong engagement tool that motivates players to continue, to set their own intermediary objectives, to pursue further with the story. As Istrate (2014) suggests, feedback can be a reward for the player, a trigger to make decisions or to do specific actions in a game. This does not mean it has to be explicitly obvious for the player, but it must be observed in order to help him or her to understand the gains of meeting the game challenges. In the case of *DayZ*, the longer the players survive, the more skills they learn, being able to adapt better to the zombie apocalypse. In addition, the loot is a reward and killing another survivor offers access to resources, with no in-game consequences. Yet, if a player decides to experience the game ethically, there is no positive feedback for his actions.

Applying this grid of analysis leads to the conclusion that a key for success is to focus on how to design immersive mechanics, while showing a compelling story. Game designers should not use interaction to deliver a multitude of choices ("shopping list"), but instead they should reinforce the immersion feedback loop. Nevertheless, allowing the players to configure the path they want to follow has a decisive role in building engagement.

Conclusions

Like any other young research field, looking for its own academic identity, the study of video games is based on approaches, findings and concepts borrowed from other domains, its necessary inter- and trans-disciplinarity creating a terminology and a methodology built from previously formulated ones. A positive aspect of this academic exchange of knowledge and methods of analysis is the use of already validated and trusted instruments. Yet, some specifics of various research communities and their insufficient elaboration may lead, as Mäyrä notes, to confusion and conflicts in between partners and parties (2009: 313). For example, the signification of video games stands in the midst of the narratology-ludology dispute.

On the other hand, the rapid development of game studies has produced a theoretical corpus focusing on these cultural artefacts from diverse angles: from game elements to the player and play experience, from signification and cultural materialization to a procedural rhetoric perspective. An overview of the main research directions defines and delimitates fundamental concepts and methodologies for the domains that do not appear to be in the sight of contemporary researchers.

The critical review of the literature in the field, aiming to find an instrument for the study of video games as cultural artefacts, helped me to build a general grid of analysis comprised of: the play interface, the narrative, the game objectives, the interactions map, the perceived degree of freedom, the structure of the characters and objects, the feedback and the gameplay. These eight attributes can be applied to an analysed object in order to understand the video game experience.

A limitation of this grid of analysis is the need of assessing cautiously the results because every time a "(part of a) game is played, the output that appears on the PC or console screen is different from any previous time, even if it is played by the same player under similar circumstances" (Malliet 2007). This creates difficulty in defining what belongs to what the game designer intended and what comes from the configuration chosen by the player.

Note

I have preferred the term *video games* versus computer games because nowadays these games are available on a large variety of platforms and structures form games consoles connected or not to a TV set, to apps for desktop computers or for mobile phones.

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