Assessing the Gaming Experience using Puppetry

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ABSTRACT
In this paper we address the question: *What factors of game experience are measured and have to be measured?* by proposing a concept called Puppetry to assess the experience while playing videogames. Puppetry was obtained using qualitative methods on the experiences of players. The main characteristic of Puppetry is that it looks at the common elements of videogames that allow the user to build the experience.

Author Keywords
User Experience, Videogames, Gaming Experience

ACM Classification Keywords
H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

INTRODUCTION
The goal of videogames is to provide players with a positive experience. A player, regardless of age or sex, plays videogames, regardless of genre, to have a pleasurable time. But being able to measure or assess pleasurable times or positive experiences has proven to be quite complicated. The role of user experience, within Human Computer Interaction (HCI), has been increasingly taken into account when trying to design applications that provide the user with a pleasurable time. User experience explores beyond usability and cognitive issues: it explores the subjective role of the user enjoying the usage of the application. In this paper we address the user experience when playing videogames, which we call the gaming experience, and try to find elements that can lead to the assessment of experience.

The domain of videogames is greatly influenced by experience at all its levels. Their design is greatly influenced by the expertise of the designers (e.g.[8, 5]); guidelines to create good videogames advise the designers to rely on what they think is fun [15]. Whilst reviewing the available literature on game design, it was

clear that the focus was not on user experience but on what makes a game a "good game" regardless of user input. That is, most of the available literature on game design is based on what designers believe makes a good videogame (e.g. [5]). And although there is nothing wrong with that approach, since such guidelines have been used to produce successful videogames, this does not necessarily correspond with what users perceive as important and hence their experiences of the games. Even within the broader domain of Human Computer Interaction generally, user experience is quite a novel concept to address. The available literature on user experience for videogames is either non-academic, such as over the counter magazines, or based on methods to measure user experience in other media such as television or books. Thus it was felt necessary to undertake a qualitative approach to determine the important features of the gaming experience from the players' perspective. Naturally, there ought to be overlap with the existing literature, if only because much of this has been written by enthusiastic game players. Grounded theory provides a way to analyse qualitative data whilst emphasising the underlying concepts in the data rather than focusing on the surface features of the data as in methods such as content analysis. Users take into consideration previous experiences when selecting a new game to play [14]. This can be interpreted by saying that the knowledge of what makes a good videogame is tacit [4]. In other words, it is possible to identify a good videogame when we are playing one, but we run into trouble when trying to describe those elements that make a good gaming experience.

It is important to make the distinction between the implementation of the videogame and the experience of playing the game. The implementation can be understood by looking at concepts such as usability [6, 11], computer speed or the quality of the graphics [18]. On the other hand, experience is about the user playing the videogame. Previous studies that have tried to understand the gaming experience, either deal with why people play rather than looking at what experience the game is offering [9], or try to explain why games provide a satisfying experience based on personal experiences [3], or from a cognitive approach (e.g. learning is fun) [7]. There are also studies that look at the outcome state of playing, when the player achieves flow [17] or immersion [2]. However, a good user experience is not

only these states. We have taken an empirical approach to look into what makes a game enjoyable. The question is the same: what are the basic elements of videogames that affect the gaming experience. However, we are not looking at what makes a good game but rather what elements of videogames affect that perception. To this end, we reviewed how players, as users in the videogame world, talked about videogames. Grounded theory [16] was used to provide a robust interpretation of this data. Hopefully, this emphasis will allow us to understand what is important to players without being influenced by the opinion of expert game designers. In doing so, it is hoped to get at the actual gaming experience as experienced by players rather than that intended by game designers.

To some extent the results obtained are as expected: graphics, sound, narrative, rules and controls are important. However, the use of Grounded Theory allowed us to provide a conceptualisation that fleshes out the relationships between these concepts. Moreover, we also identified the useful concept of Puppetry which is a way of understanding how a player becomes an agent in a games world. Identifying these elements is not geared towards designing videogames: it can be used in that way but it is not the objective. The objective is to understand how new technologies can influence the gaming experience by manipulating the constituent elements.

THE STUDY
In this paper we discuss the main results of our empirical approach to understand the elements of videogames that affect the user experience. We present the approach and results from our study aiming to contribute with an answer to the question of: What factors of the game experience are measured and should be measured? To do so, we used Grounded Theory on two different types of written sources: videogames magazines and websites. We selected four different magazines available over the counter in the UK, as well as three different websites specialising in reviewing computer games. The categories that evolved from the coding scheme eventually turned into the key elements of the gaming experience, which in turn were also grouped into two main categories. The results were validated using interviews with players, reviewers and designers. The starting point for the study was to consider those elements within videogames that affected the experience.

Game reviews were chosen as a good starting point to understand the player experience because the main goal is to try to convey in one place "what does it feel like" to play particular videogames. Reviews aim to alert potential players about the flaws or successes of videogames. The reviews are written by players with several years of experience as game players, with a broad knowledge of the domain that allows them to compare different games, as well as to highlight those elements that they find interesting. The reviews then allow us to have the opinion of several expert players for a specific game.

Both internet sources and magazines also include interviews with people related to the gaming industry, editorial pieces, and commercials for videogames. These other materials allowed us to focus on those elements that people who interact with games focus on when talking about them. It can be argued that both sources are actually driven towards the commercial success of videogames, rather than a more market-free approach. However, both sources included in their reviews a pledge to write their reviews without pressure from the big companies, and websites offer the possibility for users to include their own reviews. Finally, it is important to remark that we are looking at which elements of the videogame affect the user experience, not at the overall grade or recommendation that it receives; as long as it explains why a game is graded as such it can be considered a valid review that describes the elements of the gaming experience.

RESULTS
As intended with grounded theory, after the interviews, the answer to "What elements of the videogame affect the gaming experience?" reached saturation. That is, the interviews towards the end were failing to add significantly to the existing grounded theory. Moreover, most of what was appearing in the interviews could be explained by the forming theory. Naturally, the data could have led to a wider discussion on "why" people play videogames, but that question is outside the scope of this research.

Once we found that a saturation level was reached and a robust theory established, this theory was then reshaped and compared with the findings from the current literature on game design and cybertext, on user experience that explains why people play videogames and on what constitutes a positive experience. As mentioned earlier, there are plenty of sources on designing good videogames. Most of the writers of these books are successful game designers and have worked in the gaming industry for years. Even if we wanted to focus only on what users have to say about videogames, or on first hand experience by designers, these books already offer compelling guidelines on how to make a successful videogame: ignoring them would have made our theory incomplete. These allowed us to have a sound theoretical explanation for the elements found.

The key novelty of the resulting theory is that of Puppetry as the means by which the player engages in the gaming experience. In addition, the theory explains in one place all the elements of the gaming experience, which may have been discussed separately in other fields of knowledge, but these findings naturally bring all the disparate elements into a single, coherent picture of particular players' experiences.

ELEMENTS OF THE GAMING EXPERIENCE
The categories that emerged from the grounded theory can be classified into two meta-categories: Environment

and Gameplay. These two categories are the main elements that affect the gaming experience. The two categories interact with each other, being Puppetry the concept by which the user amalgamates them in order to form the experience. Environment refers to those elements that help the user create the place where the game is taking place. The Environment is determined by the graphics and sound of the game. Environment hence refers to both the place where the action takes places, and the rhythm on which the game is being played. Sound and graphics effects elucidate the rhythm of the game, manipulating the rhythm of the game and also allowing the user to experience a "game environment". Environment, besides setting up the place, is also the environment in which the game evolves. Gameplay refers to the rules and story. Rules are what defines what can be done, what cannot be done and the outcomes of actions. By story we refer to whatever covers the abstraction of the rules [8]. Both elements of the videogame are put together by the user by the concept called Puppetry.

Puppetry is how the user builds such experience; the key part of the game is the interactivity, the ability of the player to do something within the game. Puppetry is what gathers everything together. Puppetry can be described as how the player takes control and ownership over the game.

CONTEXTUALISING PUPPETRY
The word "Puppetry" within the gaming experience was chosen based on the common understanding of Puppetry and the relation between puppet and puppeteer. Unlike acting, where the actor becomes the character being portrayed, Puppetry differentiates between the character (the puppet) and the puppeteer. The Encyclopaedia Britannica defines the essence of a puppet as its impersonality. The puppeteer is not the character being played, and the mastering of the puppet and the character depends on the proficiency of the puppeteer controlling the threads of the puppet. We found this concept similar to what happens in videogames, and maybe with a small risk of re-using a well understood concept to describe a very similar experience in a different domain, we considered that the use of Puppetry was adequate.

To understand better the term Puppetry, it is worth considering similar concepts that have arisen in this area. Murray [10] and Ryan [13] present compelling arguments on how narrative can be understood within a cyberworld. Murray bases her elucidations on the possibility of inhabiting a fake world, where the player, or reader, has the possibility to play a second life, but still being able to return to normal life. Ryan classifies cybertext, text within the cyberworld, according to the level of interactivity. Thus, Murray's perception of cybertext can be encompassed within Ryan's classification. Without getting into the details of Ryan's classification, Ryan bases her argument in the interactivity level of the reader, and the positioning of the reader, being internal or external to the story, and with the ability to explore or change the ontology of the story. Puppetry rather sidesteps both of these perspectives because there is no immediate sense in which the player inhabits or even directly interacts with the virtual world. Instead, the player takes control of some aspect of the game that does the inhabiting or interacting. Aarseth [1] introduced the term "ergodic literature" to refer to reading in a non-linear way. He cited examples that referred to Yoga or I-Chin books, where the reader is expected to read, then practice or do some physical activity, and then continue reading. Rush [12] then introduced the term "Ergodic Bridge" to refer in videogames to the control that player exercises over the character of the game and how that changes the plot of the game. This is one aspect of Puppetry but does not cover the potential richness of how the Ergodic Bridge may be achieved. And whilst game design puts special emphasis on the controls the player will be using and how these controls should be easy to use and ergonomic, they do not make the explicit link to the resultant gaming experience that is implied in Puppetry.

Within education and learning, Gee [7] mentions that the user can take different identities whilst playing, ranging from the identity of the player, the player as the character and the role of the player as the character. This fits well with the notion of Puppetry in the sense that the gaming experience is a fusion of the player and the intended character represented in games. It would be worth exploring the notion of Puppetry and identity in greater depth. The contextualisation of Puppetry from this literature shows how similar concepts to Puppetry are understood to affect the gaming experience and affect the way users play. But the intention with Puppetry is to make explicit the link between the nature of control and the nature of the gaming experience. Puppetry, then, is the interactive component that binds Environment and Gameplay by giving the player control of the actions, which allows the player to form a personal gaming experience. Interactivity is the key characteristics of videogames. By allowing the user to manipulate the actions, using the provided controls, the player is able to put the rules and story of the game, viz Gameplay, in context with the Environment. The way the user perceives such a role within the gaming context is what provides and builds the experience.

The main characteristic of Puppetry is that it creates a layer between the player and the game. The player does not mirror the character on screen, but stays away from it. The player is able to disassociate from the character at any given moment. For example, when the player is questioned about the videogame, the player can alternate between saying "I did" and "He did", referring to the character. The controls allow the player to manipulate the character, after learning how to use them, a "tool at hand" effect is created, in which the player only focuses on the game, not on using the control.

CONCLUSIONS

In this paper we presented the elements of videogames that affect the gaming experience. We identified the elements by using Grounded Theory on the narratives of gaming experiences, starting with reviews of magazines and websites and continuing with interviews to players, designers and reviewers. The elements are Environment and Gameplay, being Gameplay the core element of the gaming experience. Environment is formed by Sound and Graphics whilst Gameplay is formed by rules, story and Puppetry. Gameplay and Environment are bounded by Puppetry, which allows the player to build a personal experience. Puppetry is the key element of the gaming experience, as it relates to the interactivity and the way the player relates to the videogame by taking control and ownership over the game. We are currently in the process of creating a questionnaire that aims at converting Puppetry into a quantifiable metric that can suggests the level of engagement of the user with the game.

Puppetry, the connection of interactivity, sounds, graphics, story, and rules, allows designers to focus on how the player is going to enter the game. Understanding the gaming experience and how the player builds it may allow evaluating what constitutes the experience of the user, but mainly, it allows us to understand that the important factor of videogames is not the videogame itself, but its relationship with the player.

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