[ECCE 12 full paper abstract] - Why are videogames engaging? Determining what we mean by 'fun' with a Grounded Theory approach.

John H. Salisbury **Robert E. Fields**

Interaction Design Centre

School of Computing Science
Middlesex University
Trent Park, London, N14 4YX
j.salisbury@mdx.ac.uk
b.fields@mdx.ac.uk

ABSTRACT
The paper summarized in this extended abstract describes work which is formulating a first theory of why videogames, in general, can engage, by means of a Grounded Theory approach based mainly in empirical data. A complete description of the methods and interim results will be provided in the final paper, this abstract will suggest the structure of these sections, while providing a reasonable introduction to the background and direction of the work, and likely situation of the finished work.

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Keywords
Pleasure, enjoyment, satisfaction, positive affect, hedonic, Flow, engagement, fun, videogames, computer games, electronic entertainment, grounded theory.

INTRODUCTION
There is a current trend in human-technology interaction fields that tends to stress the emotional and cultural aspects of the artefacts we design, rather than simply the utilitarian aspects which have dominated in the past ("Cognitive Ergonomics has accordingly become increasingly concerned with how people live with, work with, and enjoy technology in their daily lives." ECCE-12 call for papers). Terms such as 'pleasure', 'enjoyment', 'satisfaction', 'positive affect', 'Hedonic', and perhaps 'Flow', are used variously to describe a person's 'enjoyment' of technology. In this abstract we shall use the term 'engagement', where an engaging experience is defined as one that is sought out by the participant and participated in willingly. This term is preferred as it is the author's a priori belief that humans often choose to participate in activities which are not 'pleasurable' and do not create 'positive affect', but which the participant feels somewhat compelled to engage in none the less (e.g. reading Orwell's novel 1984, watching Von Trier's film Dancer in the Dark or to some extent riding a rollercoaster).

The Utility of a Theory of Engagement
It is supposed that if a description of what draws people to certain experiences with technology, and holds their attention when they get there, could be formulated; this description would be valuable to both designers and producers of entertainment products and to designers and producers of tools alike.

Where to Start
In order to generate such a description it is felt that it might be valuable to focus on artefacts that are entirely designed to be engaging, with limited consolation to other utility, such that we can concentrate on studying engagement for its own sake without having to factor out other potential motivations. To this end the study to be described by this paper focuses on 'videogames' (an undefined term as it is felt that to define it would restrict the scope of the study unnecessarily, but terms such as computer games or arcade games could be used too, as could interactive electronic entertainment).

So our question is: "What makes videogames engaging?" or "Why do people play videogames?"

This question, while seemingly fundamental for a 32 year old games industry, has seldom been addressed empirically. Of those published empirical works [Malone, 1981; Fabricatore, 2002; Kline and Arlidge, 2002] this author is aware of, all have arbitrarily restricted the scope of their studies to address only a small sample of either types of players or types of game. For example Malone's work focused on children as he was initially concerned with classroom activities, and noticed that computers were occupying a degree of elementary school children's' attentions. Perhaps this tendency to segment the problem is because it seems to be too great and complex a problem to tackle all at once, and must be divided into smaller chunks to be manageable, or it is otherwise a symptom of initial biases and starting points as it was with Malone. The

current attempt is based on the belief that it is unnecessary and possibly more confusing to divide the populations in question into population stereotypes and game genres. The method that has been selected to coordinate this investigation requires that data collection expands in terms of subject types and data collection methods as the problem is explored. This is in order to answer the research question as completely as possible and create a 'good' theory, truly grounded in the data collected. This Grounded Theory approach is especially valuable when exploring 'soft' issues, where there are few theories from which to generate testable hypotheses. It also helps when the best data collection method is not apparent from the outset.

Videogames

Videogames, as a public medium, are over 30 years old (Atari the 1st company to produce and sell such artefacts to the general public started trading in 1972) and it is often suggested in the popular press that they now produce more revenue per year than cinema box-office receipts and home video rentals. Whatever the reliability of the statistic it is obvious that people buy games, and it might be expected that they can be found playing them occasionally too.

Exactly why games have not faded into obscurity like many other pastimes suggests that they are more substantial in some way than a passing fad, providing experiences more difficult to obtain by other pursuits. An early attempt to suggest what these experiences might be is included in The Art of Computer Game Design (Crawford, 1984) in which Chris Crawford, a game developer, describes his ideas on how computer games differ from other games and game like pursuits, and why he thinks people choose to play them. These differences and reasons might well point to some of the reasons that players choose videogames, and are an interesting and informative attempt, but they are Crawford's interpretations and thoughts and are therefore unlikely to be reliable. Attempts are still being made to classify videogames in relation to games in general (Aarseth, 2003; Järvinen, 2003), but they do not directly help our current pursuit as they do not tell us what kinds of things people like to do with videogames, only what kinds of videogames currently exist.

A Psychology of Games?

In order to answer the question of why people play, we might seek answers in the psychology of motivation, but it has been suggested by those close to the industry (Fulton, 2002) and industrial design teams, that the use of such broad theories would miss essential features of games. Even if adapted to be couched in the terms of game design it is argued that they would yield little or no practical design advice. So rather than adapting theories of psychology, it is proposed that computer game specific theories be developed, as these theories are more likely to be relevant to designers of engaging products. Also we would be allowed to develop theories which cross disciplinary boundaries, which might include psychology, but also sociology and anthropology.

METHOD OF INVESTIGATION

Our investigation is intended to empirically develop a theory about an aspect of human behaviour, rather than to prove an existing theory, or to describe what people do in a certain situation (Ethnomethodology). To this end we have determined that a Grounded Theory approach (after Glaser and Strauss, 1967) would be suitable. Though this approach was initially developed for studying purely sociological phenomena, Glaser and Strauss's strategy can be employed in any investigative situation, where there are not a small number of testable hypotheses, and there is no obvious best method of investigation.

Grounded Theory Summarised

Grounded Theory is not a method in the same way that a survey, interview, laboratory experiment, or other 'method', it is more a methodology, a broad means of achieving an end. This end is a theory grounded in real data, and is achieved by an iterative process of collecting data, encoding the data, and theorising about what these codes mean (Fig. 1).

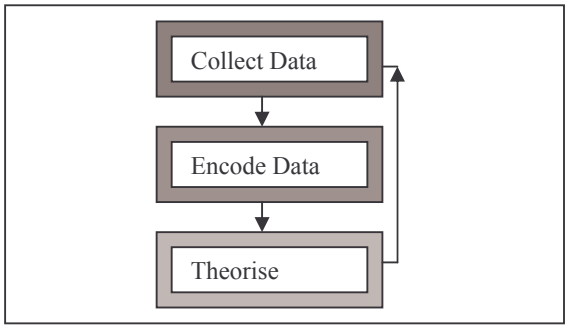

Fig. 1. General structure of a Grounded Theory Method

Data Collection

At each pass through the cycle a good data collection method (in terms of designs and subjects) is selected based on what has been collected, encoded, and theorised about in previous iterations.

Encoding the data

Encoding is a term used to refer to a process of summarising and interpreting data. Notes are made of a piece of data, in order to extract the issues relevant to the research question. These notes can be made as the data is collected, but a more accountable and transparent approach is to make notes of a record of the raw data. These notes are then encoded, in that common themes are identified and labelled and complex issues are noted and interpreted.

For Example:

CA: "Yeah, I mean, quite a lot of times I buy a game and I don't particularly agree with the review. I'd give it, in some cases, quite a lot higher or lower

than they did. Like Tomb Raider 2 and 3 and that, I didn't enjoy half as much as they seemed to."

From this quote we can see a number of things: that one can *buy* games; that this player has bought "lots" of games; that games are *reviewed*; that reviewers might *rate* as well as comment on games (thus "higher" and "lower"); that this player finds reviews of limited assistance in game *selection*; that games can be *enjoyed* to varying degrees; that not all players have the same *taste* in games.

These codes of Purchasing, Reviews and Ratings, Selection, and Tastes, are then noted for in future activities, but in the mean time we can summarise that: In selecting which titles to purchase, players might read reviews and note the commonly associated ratings, but will avoid using these ratings as the only determining criteria for purchase, because if the tastes of the player and reviewer do not match then the rating will be misleading.

Theorising

These codes, and their relationship to and instance in the data and subsequent notes, then form the basis of pre-theoretical memos, by means of an ongoing process of theorising.

For Example: Using the codes from the previous section, we might have a memo pertaining to the observation that some players do not trust reviewer ratings. Also, perhaps those who have purchased fewer games have had less opportunity to notice any serious mismatch between a reviewer's score and their own impression. So, "An experienced videogame player is less likely to adjust their expectations of a game than a novice or 'casual' player, in accordance with media published review scores", seems like a reasonable theory, and might connect with other related theories (regarding how games are selected by players) to form part of a greater theory. It might also need to be reconsidered in the light of further data.

These memos are continuously updated and edited as the research progresses, and once data collection and coding are complete, are organised into (hopefully) a coherent theory.

The point where data collection ceases is known as 'saturation'. Saturation is where new data is not yielding new knowledge, or at least not enough new knowledge to create any significant changes in the existing collection of memos.

Work Completed

This paper will discuss a Grounded Theory study which is pre-saturation. The work completed so far in terms of data collected, interesting highlights of the current memos, and likely form of the remaining iterations of the cycle will be detailed.

PROJECTED RESULTS

The nature of such a study means that while the iterative process is underway it is impossible to see the final shape of the theory (it would be absurd to embark on a theory generating study if you already knew what it was going to generate), but we can currently both make observations about the data as it is, and what type of theory is likely to be produced.

Select

One major theme which has revealed itself so far is that players can decide to become engaged with a game long before any actual interaction takes place. This selection decision can be influenced by ones peers, marketing, compatibility with personal fantasies, packaging, press (magazine reviews and so forth), sense of identification with the perceived ideal audience for this game, and any experience with apparently similar titles. This 'selection' stage of the process of engagement is a little bit more complicated than simply picking a game to play, it also appears to determine how likely a player is to invest time in the game, to 'give it a chance'. Another factor related to how long a game is granted in the approach stage (explained below) is how costly the game was to acquire. A full priced new release, bought with ones own money, is likely to receive more attention than copies gifted to the player along with many others.

Approach

Once a game is selected the player then approaches the game in order to initiate interaction with it, at some point. During this period of 'giving a chance' there are many things which might frustrate and only a few which are likely to engage. If the game suffers a poor interface, or a poor direct control mechanism then this will obviously probably lead to frustration. So too will playing a game in the wrong context, either of mood or setting. Also if a game is played and it is too hard from the outset, with the player making no immediate progress, it might also be rejected. What appears to attract players at this stage of the study is if the game conforms to their expectations and the overall aesthetic.

Play

Once the game has been played for some time different criteria are used, the 'learning curve' (which is a term commonly, if confusingly used to refer to how the game does or doesn't provide a 'good' level of challenge to the player) seems to be important, as is the amount of cooperation or fair competition allowed. The tempo of a game also seems to play a part in whether a game is really engaging in a given context. As is the minimum interaction time, which for some games is so long that it is not worth starting playing in the first place, as the available time to play is too short. This really frustrates if toward the end of this minimum period, play is interrupted, causing all progress since the last 'save',

'go' or whatever marks the start of a new interaction period, to be lost.

This last stage, of engagement during play, will benefit from considerable expansion in the final version of this paper.

Expected Final Theory Type

As this research is trying to determine the major factors in any player's engagement with software, and any categories of factors (such as personal, social or design) and interrelationships between factors within and between categories, and as the author responsible for ultimately creating this theory has a background in Cognitive Science and Computing Science, it is most likely that the final theory will best be described through a semi-formal diagram. This method of representation would allow a more direct overview of what might be many tens of factors and interrelationships, than a text description, or predicated formalism, while still allowing a high degree of abstraction. This theory being then a description of the factors and relationships discovered in and indicated by the data collected.

CONCLUSION

The Grounded Theory method of theory generation is well suited to this type of research and is generating some interesting insights so far. The full version of the paper summarised in this abstract will expand on every aspect suggested here, including: A more detailed overview of the background to this study; how Grounded Theory is being interpreted and implemented in this instance; and how the data is shaping potential theories. This last aspect of describing the interim results will benefit from the most expansion, with possible theoretical structures being discussed, and interesting features in the data being highlighted.

With this degree of structure and detail it will be possible to make predictions as to the utility of the possible final theory to design practice, ergonomic theory, and videogame theory.

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