Which Games People Play

Gaming Preference in terms of Motivational Factors

PhD Proposal
13/07/04

Tim Fletcher
Matric 9901553

Supervisors:
Graeme Ritchie
Judy Robertson

Which Games People Play: Gaming Preference in terms of Motivational Factors

1 Introduction

The issue of gaming preference – that different people have markedly different likes and dislikes – is more or less central to all computer games research. Whatever the claim or the angle of investigation, from the ever popular "do computer games encourage violence?" to "do computer games aid learning?" to "how can we make better computer games?" and "how can we sell more games in Japan?", it is crucial to be able to distinguish between what different people like. To be able to distinguish gaming tastes, we need to be able to distinguish between games – to tell one game from another and group them together meaningfully.

There are four approaches to this in research work. The most common is to use the "industry standard" of game genres, which is more difficult than it sounds as there is no agreed set of groups, let alone an agreed description of how those groups should be defined. These game genres are so prevalent that even papers that make no explicit distinction between game types customarily declare the genre of the game under investigation. The second approach is to use open-ended investigation to develop categories based on user opinion, either as an end in and of itself or as a starting point. The third approach is to define categories during the study – while this is an excellent strategy for accumulating specific information (such as whether "violent games", a bespoke category, promote violence) it does not contribute towards a generally usable system. The last method is not to distinguish between different games at all - this is common at the literary end of the field. Sometimes the generalisation is made based on an observation from a single game, and then other games are evaluated with bias from that observation.

The project proposed here aims to work towards a generally applicable system of classification – in a sense a replacement for the existing game genre system, but one based on more than conventional marketing labels. Such a system is desirable because it allows consistency across studies and the accumulation of a body of knowledge. Malone's theory of intrinsic motivation [Malone 1980] and his four motivational factors provides the template of a system to work towards.

The investigation will use knowledge elicitation techniques with expert gamers to determine their likes and dislikes. A system of classification will be derived from this information, in the form of motivational factors. Expert gamers will then be used to classify games according to those motivational factors, which tests the integrity and communicability of the factors. These classifications will then be cross-analysed with a large sample of gamers who rank or rate their favourite games. The analysis will look for groups or trends in preference according to the derived motivational factors.

2 Literature Review

2.1.1 "Industry Standard Genres": No Agreed Upon Standard

The problems evident with the use of industry standard genres can be seen very quickly with an examination of the various sets of genres proposed from different sources. Atari (nee Infogrames[1]), collect customer data using registration cards included in their products. The 2003/04 card asks

> Which types of games do you enjoy?
> Action, Adventure, Sports, Strategy, Racing, Simulation, Kids, Arcade, Beat 'em ups, Shoot 'em ups

PC Gamer UK magazine includes a monthly feature where they group news by game type. Their categories in the July 2004 issue are First-Person Shooters (FPSs), RPG (Role-Playing Games)/Adventure, Online, Strategy/Management, Simulation and Oddball. The previous month their categories were FPS, RPG, Action-Adventure, Simulation, Multiplayer/Online and Strategy. A different regular feature suggesting the best games currently available by category instead uses FPS, Real-Time Strategy (RTS), RPG, Massively Multiplayer (MMORPG or MMOG) and Adventure.

GameSpy (a multifarious and very prominent provider of web services to gamers) asked in an online survey in 2004:

> Which of the following game genres do you tend to play the most, on all platforms?:
> Action, Adventure, RPG, Sports, Strategy, Platformer, Card Games, Board Games, Puzzle Games, Simulation

There are studies which use, or attempt to use, these genres. In an investigation into the gaming habits and preferences of children in Canada, Kline [Kline, 1998] asked children to rank the genres of Action, Puzzle, Educational, Fighting/Combat, Sports, Racing, Roleplay/Adventure, and Simulation. The majority of their findings were of a primarily social aspect, such as time per week spent playing games and cost of gaming paraphernalia owned. Preference-related results showed that action games were the favourite, particularly amongst those who played games heavily. The study reports that the majority of factors that contribute to making a good game concern "realism", although the list of factors this is said to cover includes, as well as "realistic graphics", also "good sound effects, lots of control, and good characters to play". The author's ascription of these factors to the banner of "realism" is dubious, and illustrates the difficulty when trying to group user findings into broader categories.

The author acknowledges:

> Given the complexity of contemporary game designs which combines aspects of different genres, the old categories no longer serve to adequately characterize the aspects of games prefered by gamers…
>
> …We found that the industries genre classifications were not very helpful in distinguishing the games that teens most enjoyed. We think that although gamers do form preferences for certain kinds of games, this only stimulates an interest in video game play in general. This

[1] Infogrames, a publishing company with a very poor reputation (for customer support and other issues) recently completely renamed themselves, presumably in an attempt to sidestep some of that reputation.

> blending of genres reflects trends in game design, which blends features of many genres making older distinctions seem obsolete to players. As such, we think researchers need to develop a better understanding of the distinctions and criteria that gamers themselves use to differentiate between games.

[Yee 2000] is an exploratory online study looking for correlation between Big Five/OCEAN and Myers-Briggs personality types[2] and gaming habits. First, a small questionnaire was used to compile popular game elements (such as "heart-pumping action", "limited multiplayer" and "war elements"). Then a much larger questionnaire recorded preferences for those elements along with testing for personality. No significant correlations were found between these elements and any of the personality types. The author also grouped the various elements into genre groups: FPS, Turn-Based Strategy, Adventure/RPG, Massively Multiplayer Games, Multiplayer Card/Logic Games and War/Strategy Games.

Five different sources yield five different lists of genres, and it is actually very difficult to find any pair of sources which agree completely on such a list.

2.1.2 Genres: No Agreed Upon Genre Definitions

Interestingly, research which uses game genres (game genres is used to refer to the concept of assuming there is an agreed upon standard; the agenda here is to demonstrate that such a thing does not exist) does not generally provide definitions of those categories, relying instead upon the reader's knowledge of the industry. The online world of gamers, however, is not at all averse to attempting it. Almost certainly the most contentious genre is that of the Role-Playing Game or RPG. *Diablo 2* is defined as an RPG by its publishers, and the content of the game involves repetitively clicking on monsters to kill them. *Morrowind* also describes itself as an RPG, but this game is primarily based around freeform exploration. The recent RPGs published by Bioware, such as *Baldur's Gate* and *Knights of the Old Republic*, described in the gaming press (and by Bioware themselves) as "revitalising the RPG genre" include elements both of monster killing and freeform exploration, but pride themselves principally on a heavy involvement with story and strong characterisation. Japanese RPGs such as the *Final Fantasy* series emphasise party interaction and strongly de-emphasise player choice. Fans of each of these styles of games can be found on the internet claiming that their style of games is the "true RPG", and yet as far as the publishers are concerned, all these games are of the same genre.

PlanetNintendo.com [Planet Nintendo 2004] (Nintendo primarily publish Japanese RPGs) offers the following definition (emboldening theirs):

> But now, what is an RPG?
> The definition of the RPG genre isn't set in stone, mainly because just about every RPG is unique. Some offer an action-like style, while others involve adventure elements, and even puzzles. Heck, some RPGs such as *Final Fantasy X* offer somewhat of a sport! Of course, every RPG has the same base, which normally involves five parts: traveling, gathering information, stocking up on items and new weapons/armour, conquering dungeons, and battling. Therefore, an RPG game normally has its own elements, plus it takes a few from other genres, too.

---

[2] Two popular and competing systems of classification for personality. For more on Big Five/OCEAN, see http://www.personalityresearch.org/bigfive.html For more on Myers-Briggs, see http://www.myersbriggs.org/

> In short, the definition of an RPG can be put as this:
> **An RPG, or Role Playing Game, is a game in which the player is put in the role of one or more characters in order to achieve a goal.**

The emboldened part of the definition accurately describes nearly all computer games, RPG or not, and the earlier part of the definition really only describes Japanese-style RPGs. In an interview on RPGVault [RPGVault 2001], Feargus Urqhart, head of now-defunct Black Isle studios, well known for making RPGs, defines them as:

> Character development, solving quests, and killing things.

An interesting article on another Nintendo site [NGF 2004] attempts to define RPG by observation of RPG games, but the characteristics listed only truthfully apply to Japanese RPGs, for example:

> An RPG has a linear or zigzag field topology. There is only one main way to go, but you have to navigate yourself through what seems like a huge area.

This is true of almost every Japanese RPG, but in no way applies to *Morrowind* (or earlier games in the series which date from over a decade ago). Kindrack, a staff writer for GameSpy, writes in [GameSpy 2003]:

> Stats and progress bars do not an RPG make, and I'll go to my grave insisting that Diablo and its myriad of clones should not be called RPGs.

Although RPG is easily the most troublesome of genres, the same problems are evident as games veer close to and cross genre boundaries. A new genre, sometimes called the "Stealth 'Em Up" was created to explain the differences between games such as *Metal Gear Solid* and *Thief* from the action games they superficially resembled. Hardcore Thief fanatics would no doubt take offence at such a grouping, pointing to the way *Metal Gear Solid* still builds the basis of its gameplay around shooting people, whereas *Thief* emphasises avoidance. Since about 2000, games based on the premise of realistic wartime combat (set in WW2, Vietnam, etc) have risen to prominence in the FPS scene, but the heavy emphasis on care, caution and realistic danger has lead many to question whether these games belong in the same category as conventional Action games.

2.2 Find It Yourself

Investigating categorisation for oneself falls into two broad categories; performing some kind of open-ended survey to investigate the preferences of the general public (or the target demographic group), or using knowledge of existing games to hopefully work out a taxonomy based on theory.

[Crawford 1982] is a very early taxonomy of games which were important twenty years ago. These look quite out of date now, being based on the controls and technology available at the time. Crawford would be the first to admit this as he states:

> I will insist on an important qualification: I do not claim that the taxonomy I propose is the correct one, nor will I accept the claim that any correct taxonomy can be formulated. A taxonomy is only a way of organizing a large number of related objects.

What is more interesting are his stated reasons for desiring a taxonomy in the first place:

> …we can learn a great deal about game design by establishing a taxonomy of computer games. A taxonomy would illuminate the common factors that link families of games, while revealing critical differences between families and between members of families. A well-constructed taxonomy will often suggest previously unexplored areas of game design. Most important, a taxonomy reveals underlying principles of game design.

Much later [Wolf 2001] used a similar exploratory approach in the creation of 42 genres intended as a replacement for the current computer game genre system (although the author seems largely unaware of more popular genre conventions, citing only "Shoot 'Em Up"). Wolf's aim, from examination of the genres he suggests, appears to be the most specific form of description possible according to his own examination of many games. For example, he distinguishes between Maze games (where the objective is to find the way through a maze) and Escape games (where the objective is to escape from an enclosure), with the caveat that of course a game can be both a Maze game and an Escape game. However, not all of the genres concern game objectives (the Fighting genre describes games in which the player spends the majority of their time in hand to hand combat whereas the Gambling genre is applied to other kinds of games in which some kind of (largely virtual) monetary stakes are involved). In fact, there is no clear pattern to the genres at all; some are extremely specific (such as the subtle differences between Driving games and Racing games) and some are very broad (such as the perennial Role-Playing genre which includes both *Diablo* and *Fallout* - examples of two very different sorts of RPG). Some describe user interface, such as the distinction made between Adventure and Text Adventure.

Like the "industry standard genres", there is a good deal of fuzziness in the definitions, such as Wolf's Adventure category:

> Games which are set in a "world" usually made up of multiple, connected rooms or screens, involving an objective which is more complex than simply catching, shooting, capturing, or escaping, although completion of the objective may involve several or all of these. Objectives usually must be completed in several steps, for example, finding keys and unlocking doors to other areas to retrieve objects needed elsewhere in the game. Characters are usually able to carry objects, such as weapons, keys, tools, and so on. Settings often evoke a particular historical time period and place, such as the middle ages or Arthurian England, or are thematically related to content-based genres such as Science Fiction, Fantasy, or Espionage.

The only definitive statement here is that Adventure games always involve a complex objective – every other claim is prefaced with usually, often and may.

Wolf states that his aim is to define genres according to interactivity rather than iconography – which is to say that he is more concerned with what is happening than where it happens. This is soundly based on the premise that a game which involves moving from side to side and shooting at aliens is in some way very similar to a game which involves moving from side to side and shooting at Indians. However, he seems to then fall into a kind of iconographic trap as his genres become more specific; the Adaptation genre is applied to those computer games which are interpretations of other games (computer chess and so on) – while this may be a useful piece of

information to remember about a game depending on the direction of investigation, it is unclear what relationship this has to interactivity and how it is more relevant or more interesting than whether the antagonists are aliens or Indians.

The wandering nature of these genres is demonstrated well by the Collection game genre, of which Pac-Man is the first example. Pac-Man has already been categorised as a Maze game and an Escape game (regardless of the ambiguity of whether Pac-Man is actually trying to escape from anywhere), but because Pac-Man first has to classically eat all the dots in the level, Wolf describes it also as a collection game. However, the nature of Pac-Man's "collecting" basically amounts to an efficiency puzzle where the idea is to pass over each space in the maze once and avoid passing over spaces more than once wherever possible.[3] This is radically different from more conventional "collection" games such as *Pokemon* or *Dead or Alive: Xtreme Beach Volleyball* where the objective is to collect a large number of distinguishable items and build up a collection of them. Pac-Man's "collecting" is simply an explanation for the activity rather than any kind of end in and of itself – this is an iconographic matter rather than interactive one in Wolf's own parlance.

Another difficult category is Pinball:

> Pinball
> Games which simulate the play of a pinball game. Although these games could be considered as Table-Top Games, there is a tradition of video pinball games and a wide variety of them to warrant categorizing them in a genre of their own.

As the quote demonstrates, Wolf seems to see such a taxonomy as a kind of snapshot of the current state of computer games. No particular distinction is drawn between Pinball games and other Table-top games, but it is felt that Pinball games are a prevalent enough phenomenon to warrant their own category. Of course, such an approach is entirely dependent on the current knowledge of the person conducting it. Though it is usually difficult to ascertain the gaming experience of a person, Wolf helpfully includes copious numbers of example games for each of his categories and it is difficult to imagine that he wouldn't include mention of any game he was familiar with, and it is immediately clear that the majority of the games from which he draws his categories are very dated – many from fifteen years ago and before. It seems strange in 2004 that Pinball games have their own category but the totally dominant first-person perspective does not, but it is not the specific list of genres at any moment that is the problem but the approach taken to generate them. Even with a large group of gaming experts, such an unstructured approach can seemingly progress infinitely – an expert on role-playing games makes a good case that the genre be divided into sub-genres (as Wolf has done with Driving games and Racing games) only for an expert on one of those sub-genres to divide it even further. The only logical end to such a sequence is that because there are subtle differences between even the most alike of games, there must necessarily be one genre for each game.

2.3 Invent It Yourself

[3] A similar but more restrictive form of such a puzzle covers each square with ice – treading on the ice once cracks it, and treading on it twice sees the player falling through to their death. Pac-Man encourages, rather than forces, a similar pathfinding strategy.

Studies which categorise games according to a study-specific definition typically have an agenda to advance, and a popular and recurring example of this is the question of whether computer games promote violence, often moderated to "Do violent games encourage violence in children?"

Jeanne Funk & Debra Buchman, known for their work on examining differences in gender preference, use a study-specific categorisation. [Funk/Buchman 1996] is an investigation of what children consider to be socially acceptable games for girls and boys to play. Participants were asked to choose three favourite games and then select a category for those games from these categories: General entertainment, Educational, Fantasy violence, Human violence, Nonviolent sports and Sports violence. (Fantasy violence is differentiated from human violence as being directed towards a cartoon character rather than in a fantastical environment.)

The lack of relationship between these categories (almost exclusively dealing with presence or absence of violence) and the stated research agenda (even described by the authors as "exploratory") is clear, and the study even includes such statements as:

> …girls were more likely than boys to view these games [games with aggressive content] as being appropriate for girls. This may not be entirely possible... playing violent video games may increase the likelihood that girls will adopt ruthlessly competitive "male" tactics in everyday interactions.

The danger here is that by approaching a study with categories which are biased from exposure to a different line of investigation, the answers can only be given in terms of that line. In this case, Funk and Buchman would not be able to answer their question about socially acceptable games in any way other than whether violent games are socially acceptable, whether educational games are socially acceptable, and so on. This is a much narrower question than what is formally stated. However for a study with a clear hypothesis centred around a particular concept (such as violence, racism, sexism, etc) a more general model of categorisation such as game genre would be much less useful. Such studies are in a sense separate from those which investigate games on a more general level. A study which asks the specific question of whether girls who play violent games suffer from social ostracism would not benefit from using categories like RPG, as RPGs are not necessarily violent (though most are). Of course, it might be better to ask instead what games girls who are socially ostracised for their game playing habits play.

2.4 Talk About All Games

A popular tactic, particularly with wholly theoretical research, is to avoid the question of differences in games and gamers by making a claim about games as a whole, on the assumption that games (and in some cases gamers) are in general similar enough for it to hold. One of the most popular battlegrounds for such claims is the narratology/ludology divide where scholars claim that all games are explained in terms of stories or that (broadly) all games cannot be explained in terms of stories. [Smith 2004] takes the view that this debate is more or less concluded in favour of compromise, save for a few extremists, but nevertheless such discussion as goes on tends to fall into the pattern "all games are narrative", "all games are not narrative" or even "all games must be described as some mixture of narrative and something else".

For example, Gonzalo Frasca (the originator of the term "ludology") in response to the more specific narrativist or dramatist approaches of other researchers, protests:

> While I do not necessarily discard these approaches, I think that they are incomplete and that by studying videogames as something else than games, they are denying its main potential. This potential is not narrative, but simulation: the ability to represent dynamic systems.

This is not an ambiguous statement; the claim is that the greatest potential for all games is as some feature he believes in, and that those who claim that the greatest potential is some other feature must be mistaken. Such all games claims, particularly the theoretical ones, present a problem chiefly because of their appeal to intuition. Janet Murray [Murray 1997] claims:

> The narrative content of [computer] games is thin, and is often imported from other media or supplied by sketchy and stereotypical characters. The lack of story depth makes even wildly popular figures like the Mario brothers or the Mortal Kombat fighters impossible to translate into movie heroes.

She is basing this a claim on her own gaming experiences, backed up with the assumption that those gaming experiences sufficiently represent all possible gaming experiences. The best a reader can do is to examine whether their experiences seem to match the author's experiences.

In [Eskelinen 2001], the author draws a large philosophical line between narratives and what he sees as the very mechanistic, clarity-focused nature of all games:

> In narratives and many other kinds of fiction it is acceptable and sometimes even preferable that users are misled by being given wrong instructions. But in games the deliberate frustration of action seems clearly to be an intolerable option. One might think of unreliable maps giving false and incorrect information about the location of the player or of the objects he's seeking - that's something almost every writer would like to do, and almost every player and game designer to avoid - the explanation for this difference in taste lies perhaps in the ergodic (pseudo) physicality of the game. Or in the difference between two kinds of obstacles or modes: lies and riddles.

This flat statement, that games avoid deception, was first contradicted (several years before it was written) by the game *System Shock*, which used different visual effects to confuse and frustrate the player. Similarly, plot techniques such as having the player be unaware of their true goal are becoming more and more prevalent as game stories grow more sophisticated and draw upon the fictional techniques that Eskelinen mentions.

[Wolf 2001], although an exploration of genre and the differences between games, posits that:

> video games' heroes are certainly more static than film ones, and plots are often even more predictable.

This is a very general claim; that every character in every game is more "static" (which in this context refers to a lack of character development) than every character in every movie. No evidence is offered to support this; the reader is simply assumed to agree. A comparison of the film *Predator* in which the main character ends the film in almost exactly the same psychological state as when he started and the game

Planescape: Torment in which the entire main cast undergo significant character transformation undermines this claim.

The problem with claims such as these is not the claims themselves, because they can be recognised and corrected, but the attitude behind them. Observations are made of existing games (often a very small subset), and then very general statements of possibility and use are made about all games. In many cases the observations are astute, for some group of games, and what needs to be identified is which games they apply to rather than simply assuming that it applies to all of them.

2.5 Malone & Intrinsic Motivation

Malone [Malone 1980], later revised as [Malone & Lepper 1987a] investigated the incredible motivating force of computer games and how it could be harnessed and put to use creating motivating learning environments both on and off the computer. Rather than starting with the computer games themselves, he started with earlier psychological work on motivation which predated computer games.

Malone's preferred term for his avenue of investigation is *intrinsic motivation*, which is to say that people want to perform the activity not because of some externally imposed reward or punishment system (this is *extrinsic motivation*) but because of the properties of the activity itself. Outside Malone's work, this is an excellent analogy for a general descriptive term for the reasons people play computer games. The vague term 'a good game' can also be defined as a game people want to play despite there being no external reason for them to do so; in other words, an intrinsically motivating game. The process of creating better games is therefore the same as the process of creating games that are more intrinsically motivating. In such a self-motivated activity as games playing, the phrase intrinsically motivating should be considered broadly synonymous with enjoyable. They are not the same concept by any means, but any game which is enjoyable should upon inspection prove intrinsically motivating, and vice versa.

Malone found that the three factors most commonly found in previous research on the subject were:

- that a challenging situation which allows comparison of performance with yourself and others was motivating
- that the satisfaction of curiosity and the acquisition of new and interesting information was motivating
- that the opportunity to indulge in fantastical escapism was motivating

What Malone realised was that in contrast to what the earlier researchers were positing (that their "factor" was the sole or primary component of motivation) these three factors were not mutually exclusive; that there were many activities (computer games amongst them) which possessed all three of them. Any kind of claim to the effect that one of the three factors was solely responsible for motivation was unwarranted in the absence of further investigation.

The factor of *challenge* involves the opportunity to test oneself. Anything which allows for this testing should be considered to afford challenge, but factors which

were found to be important in earlier studies are the freedom to choose an appropriately difficult challenge, and the opportunity to compare one's performance with one's other performances and the performance of others; in other words, keeping score. The factor of *curiosity* involves the acquisition of new knowledge, and earlier investigation showed that knowledge which was verifiable but which conflicted with our existing beliefs was the most motivating to acquire. The factor of *fantasy* involves someone being able to believe or imagine that they are someone or something they are not. Malone also tentatively introduces a fourth category, the factor of *choice*, which says that the opportunity to exercise freedom can also make activities more motivating, although this factor does not appear in his studies.

Malone's first practical study is a series of preliminary interviews with 65 primary school children, all of whom had some mandatory computer experience because of classes (which he sees as an important factor by comparison to those children who have chosen to gave computer experience). The interviews primarily establish both a ranked list of the 25 most popular games, and reasons why the children like or dislike those games. The study generated a number of interesting, if informal, findings, such as that the top three ranked games all had very clear, simple objectives whereas the bottom two games had no real objective at all. Malone then goes on to classify the children's rationale comments into his categories. The most interesting finding here is that although more comments concern the Fantasy nature of the games than any other factor, by Malone's analysis the "amount of fantasy" was not correlated with the popularity of the game, which suggests that although fantasy is a crucial aspect, the requirements differ widely between different people.

The paper ([Malone 1980]) includes two practical experiments, although the first is omitted in the later revision of the material and does not have a clear relation with the investigation. The second experiment was based around the construction of degenerate variants of the game Darts by systematically removing features from the game to make it simpler and simpler, and presumably less intrinsically motivating. Although the removed features were presumed to be intrinsically motivating, and can clearly be mapped onto the categories of challenge, fantasy and curiosity, they were not grouped together in a meaningful or predictive fashion. [Malone & Lepper 1987b] summarises the results as:

> Somewhat surprisingly, there were significant differences between boys and girls in what they liked about the game. The boys seemed to like the fantasy of arrows popping balloons and the girls seemed to dislike this fantasy. The addition of musical rewards, on the other hand, appeared to increase for girls, but to decrease for boys, the intrinsic interest of the activity. The most important general implication of these results is that such motivational embellishments can be important in creating intrinsically motivating environments, but that there may be large individual differences among people in the features they find appealing.

What the experiment did not produce was any clear information on the validity of the proposed model of intrinsic motivation or clear indications of any hierarchy of importance on the part of the three (or four) motivational factors. The research makes no such claims, and indeed the motivational factors had been previously demonstrated as relevant by the earlier psychological work they were derived from. Much of [Malone 1980] and [Malone & Lepper 1987a, b] is devoted to an informal exploration of how to implement the motivational factors highlighted, and also discussion of the

central question (to them) of whether intrinsic motivation does or does not assist in learning (which is not relevant to the issue of computer game categorisation).

The continuing relevance of this work is that when viewed as a tentative answer to the question "Why do people play computer games?", it is inclusive rather than exclusive in nature – it suggests that there are many factors involved rather than one of sole importance. What is most significant is that unlike the tentative compromise between "games are narrative" and "games are not narrative", the factors involved have a sound basis in psychological work rather than being developed entirely theoretically. In fact the factors proposed here are instructive in analysis of the current state of games research – narratology and ludology are in a sense simply very restrictive, exclusive answers to the question of why people play computer games. Narratology says that it is for the sake of the story. A good story can be considered to be information which is drip-fed to the user in likeness to the factor of curiosity. Hardline ludologists on the other hand generally speak in terms of problems, puzzles, objectives, progress and other issues which are clearly related to the factor of challenge. That one or the other is not the be-all and end-all of gaming is now understood, but the difficulty lies in understanding how these factors interact.

3 Core Description

3.1 No System

As shown in section 2, the current state of the field is that a broadly applicable system of categorisation that can be used to identify differences in gaming preference is a desirable thing in games research. Many researchers incorrectly believe that the so-called industry standard genres fulfil this need, but the genres are too inconsistently defined to be anything than easily debated labels. One alternative system ([Wolf 2001]) is very specifically defined, but designed for no particular purpose and highly reliant on the knowledge of the person constructing it.

The broadest relevant question here is simple: why do people play games? There are many reasons to answer this question, from simple scientific curiosity to Malone's desire to apply the same principles elsewhere to a desire to understand game playing in order to make better games. To begin to be able to answer this we have to ask the further question: what games do people like to play? Simply listing all of the games that every player likes is unenlightening though; a necessary extension is to know what the games tell us about the people. This entails further questions: what are these games like? How can we describe them? How can we distinguish between them? How can we group them together? This of course is where the issue of categorisation becomes relevant.

No taxonomy or system of categorisation is absolutely all-encompassing. A good taxonomy provides groups which are useful, which is to say that they should be informative with regard to some purpose. The Wolf and Crawford genre systems already discussed were built with exploration in mind, to highlight what games were like and possibly identify new areas of extension. The aim here is different, and should primarily address the central question of why people play games.

3.2 Motivational Factors

Malone's work provides a useful piece of terminology towards this end. The concept of intrinsically motivating factors is readily applicable to the central question. "Why do people play games?" becomes "what are the intrinsically motivational factors involved in game playing?" – these questions should be roughly synonymous. Also, "how can we describe games?" becomes "how can games be described in terms of intrinsically motivational factors?" These questions are not the same, but the latter question is much more approachable than the former, and more specifically relevant to the central question. Malone's work also suggests that there may be multiple complementary or contradictory factors involved rather than a single prime motivational factor (a single factor being the answer that the narratologist and ludologist approaches are seemingly looking for).

The desired taxonomy would therefore include a number of meaningful, enlightening categories which can be used to describe games. These categories could be single labels (in the same style as "this game is an RPG") or be intended to work in multiples (such as Wolf's "this game is a Puzzle game and an Escape game and a Maze game").

3.3 Representational Aspect

A relevant issue which must be addressed at this stage is the *representational* aspect of a game. This roughly corresponds to what Wolf describes as the iconographic information and Malone might call the implementation of the Fantasy factor. In short, the representational element is the fictional content of a given game: the setting, the identities of the characters, the developing plot and so on. It is what the various abstract entities in the game world are supposed to represent. In *Space Invaders*, the representational element is that Earth is being invaded by aliens with a specific appearance and with an amusingly characterful walk, and that the player's spaceship must defeat them. In *Half-Life*, part of the representational element is that the player takes the part of a physicist while aliens invade an underground facility through dimensional portals.

The important thing about these representational elements is that they can make it difficult to analyse what people like about things (what motivational factors of that thing they find appealing). For example, if at any point in the last 25 years you were to ask games players which games they liked and what they liked about them, you would probably find at least one gamer who proposed a Star Wars game as one that they liked, and the reason they gave for liking it was because it was about Star Wars. (Malone found just such a response in his survey of children.) Star Wars games (as well as those based on many other licences) have been consistently profitable even when popular consensus says that the game is of poor quality. Something about Star Wars is inherently appealing to some people; we could say that the inclusion of Star Wars material is an intrinsically motivating factor for such people.

The difficulty is that these representational elements are infinite in variety. Star Wars is clearly related to a concept called science fiction, and yet not every self-claimed science fiction fan likes Star Wars. Even among Star Wars fans there is a well-known divide between those who think of Star Wars as the original trilogy and those younger fans who only know the newer prequel films well. It would not be unusual to hear someone say that they didn't like *Half-Life* because the plot involves aliens and guns, and aliens and guns simply don't appeal to them. Whilst these representational issues seem to be extremely important in determining what games (and indeed other forms of entertainment) people like and dislike, they appear to be very specific. Although there may be interesting groups and patterns of preference involved, this is a large and logically distinct area of study.

Successful implementation of Malone's factors is dependent on representational elements to one extent or another. To create a challenge, the player has to be given something to interact with. The representational information tells you what that thing looks like and is supposed to be, but the Challenge factor tells us that challenges are a motivating factor, no matter what the challenge is. There will be people who are highly unmotivated when the challenge corresponds to some representational element they do not care for – maybe shooting aliens with guns, or solving a chess puzzle. This does not affect the concept of challenge itself, but rather suggests that such a factor needs to be presented in such a way that matches a player's representational tastes. The object of interest here is the underlying factor, not the representational

"fluff" (a term used by some gamers to describe the background story and setting of a world).[4]

3.4 Malone's Factors

The intended strategy for tackling the question of why people play games is therefore to create or discover a system of classification which can be used to describe games in terms of the intrinsically motivating factors which contribute (positively or negatively) to the appeal of a game.

Why not simply use Malone's factors? They are compelling, and seem to explain many of the appealing things about computer games (for example, the fantasy factor seems to explain the oft-repeated statement that computer games are good because or when they can convince you that you are someone or somewhere else entirely). However, they are based wholly on studies which were independent of each other, and while this does not in any way impinge upon their relevance or usefulness, it questions their status as a complete whole. Each of the factors was recorded separately, in the terms that the researcher thought important. There is no reason to believe that there cannot be fifth, sixth and further additional factors waiting to be discovered. Perhaps when applied to computer games one of the factors is better represented as two sub-factors, or maybe two factors (such as fantasy and curiosity) would prove to be inseparable in practice and are better combined.

A safer approach is to start from scratch, to accumulate information about why people play computer games and to derive appropriate motivational factors from that. The danger of simply using Malone's categories is that if they prove somehow insufficient (and there is no reason to believe that they wouldn't), that such a from-scratch approach might then need to be taken anyway. The approach taken by Malone, however, in thinking in terms of representation-free, motivational factors is very important.

3.5 Style of Approach

Assuming such a system of factors or categories can be ascertained, the next question is whether these categories tell us anything about game players and through them hopefully game playing in general. Given a set of factors, we need to be able to assess the impact of those factors on players, and the bridge between the factors and the players is the games themselves.

It seems unlikely that the nature of the factors discovered will be in the form that each game is considered to embody a given factor and only that factor. If the discovered factors bear any resemblance to Malone's factors it is likely that some or all of them will be present to some degree in every game. In such a case, games would need to be described or rated in terms of the extent to which they include, embody or implement the factors, either on some kind of quantitative or qualitative scale or in terms of

[4] An interesting and relevant observation at this point is that there appears to be a divide between two kinds of players: there are those for whom whether the factor of challenge is present outweighs their personal representational tastes – in a sense, they will play anything as long as it satisfies their craving for challenge. The other kind of player will only play games which are acceptable to their representational tastes no matter how well a given game might satisfy that craving.

simple presence or absence of that factor. With a body of games rated in this way, players' preferences could be examined in terms of the motivational factors.

A simplistic example:
Game 1 is said to embody factors A, B and D
Game 2 is said to embody factors A, C and E
Game 3 is said to embody factors B, C, D and E

It could hopefully be inferred from this that a player who likes games 1 and 2 but dislikes game 3 finds factor A particularly appealing. If there is significant consistency in whether they always like games which embody A and dislike games which do not, this would be an important result. If a significant number of participants were found to prefer a particular factor, this would show dominance on the part of that factor in the appeal of computer games. If no factor was found dominant, this might suggest that all factors are of roughly equal importance, or that each player had their own dominant factor. If the ratings were more sophisticated, where a game could embody each factor to greater or lesser extent, such analyses could be correspondingly more sophisticated – finding for example that factor A is more appealing when factor B is present in some but not too much quantity.

4 Intended Study

The intent of the study is to provide an answer to the question of why people play computer games. The approach is discussed in section 3, but more specifics are given here. Firstly knowledgeable, expert gamers (such as games reviewers) will be interviewed in order to accumulate data on what contributes (positively or negatively) to the appeal of computer games. From analysis of this data motivational factors will be derived. Additional knowledgeable gamers will then be asked to rate computer games in terms of those motivational factors. A broad sample of general gamers will then be asked to rank a large set of games in terms of preference. Combining the rating of the games with how each gamer ranked them, patterns or groupings of motivational factors will be looked for both for individual gamers and for the gaming sample as a whole.

Stage 1

The first necessary task is the development of usable motivational factors which can later be used in more conventional studies. This will be approached through formal discussion with knowledgeable or expert gamers. Such gamers will be interrogated to find out what they consider to be the relevant factors that contribute positively or negatively to a game's appeal. Computer game journalists would be a good choice of expert gamers at this stage, because assessing the appeal of games and explaining that assessment is a large part of their job. The use of knowledge elicitation techniques developed for the design of expert systems would be suitable for this task, because such techniques are intended to extract details of decision making from experts, which is exactly what is required here. From their answers, and with the caveat that specific representational issues will be avoided, motivational factors will be derived.

Determination of whether this derivation is accurate will be made through two means. Sections of the derivation will be repeated by others to check for inter-rater reliability. Also, the derived factors should be communicable to the expert gamers, though this will be tested in stage 2.

Success at this stage would yield a system of categorisation which can be used to describe games in terms of their intrinsic motivation. The notable potential failure here is that the system might miss possible factors or be derived incorrectly, something which ought to show up at later stages.

Stage 2

The second necessary task is to take the new motivational factors and describe current or recent commercial games in terms of them. This is a task also suited to expert gamers such as games journalists (in this case they are used to rating and describing games). Although it could be performed by the researcher, the advantage of using gamers is that many simultaneous ratings can be made, which allows for a broad consensus of agreement on ratings rather than one individual's assessment. In addition, this would require the definition of the factors to be successfully communicated to the gamers, which is a useful test of their integrity. The number of games which need to be rated in this way is quite large, because when gamers are asked to rank games they may not have played all the games mentioned, so there need

to be enough that even only those they have played contributes a sufficient quantity of data.

Success at this stage would result in descriptions of many games in terms of the motivational factors from stage 1. An important potential failure at this stage would be that the experts disagree substantially when assigning ratings, which might be an indication that the factors are poorly derived or poorly communicated. The factors could be improved and stage 2 repeated, or stage 1 could be repeated with more participants to accumulate hopefully more accurate factors.

Stage 3

The third task is to associate the factors with gamers by looking at their gaming preferences. A large sample of general gamers will be asked to rank a large number of games in order of preference. Using the ratings from stage 2, this should yield information about each gamer's preferences in terms of the motivational factors from stage 1, and also the preferences of the sample of gamers as a whole. By looking for groupings of preferences, the importance and role of each of the motivational factors will be examined. As a potential failsafe, additional demographic and personality data will be collected for each participant so that these can be investigated if the analysis shows this to be desirable (because of some kind of grouping) or necessary (because the analysis has shown nothing interesting, but crossing with other data might produce useful results). Examples of such data would be age, sex, cultural background, amount of regular gaming, years of life spent as heavy/medium/light game player, and so on. If the experiment is set up in such a way that personality data can be recorded (for example, using a Myers-Briggs questionnaire) then this will be collected too.

Success at this stage will yield interesting information about preferences in terms of the factors. An informative but disappointing result would show that the analysis of the factors showed no interesting grouping and afforded no inferences. In this case, stages 1 and 2 could be repeated in order to generate new factors and then rate the games in terms of them. The data collection of stage 3 would not necessarily need to be repeated as the data on game rankings would still be relevant.

Extensions

The range of possible difficulties that could occur necessitate that the time plan include a healthy margin for repeating stages. However, if the difficulties do not occur, the extra time can be used for extensions. Depending on the amount of useful data collected in stage 3, additional investigation could be conducted into comparing the derived motivational factors with personality types, to see whether particular gaming preferences (on those terms) matched established personality types. Another possibility (though much more time consuming) would be using the collected information to develop small, example games (for example, variants of Breakout) which try to embody the motivational factors. These games could then be tested on gamers who are known (or can be demonstrated) to like particular factors to see whether the preference transfers to the example game.

Plans for Failure

The intended path of study is risky, in that later stages depend on earlier stages. Even with the time for repeating stages, there is always the possibility that no significant data showing anything at all will be collected. In this case, a logical fall back position would be to test and use the Malone factors instead of those derived in stage 1. Malone's factors, while apparently not that well-known in the games research field, are the best candidate for a pre-existing system based on psychological work.

5 Time Allocation

The study is divided into three stages, two of which have significant analyses involved. In addition, failure to generate useful findings at one of these stages may require it or a previous stage to be repeated.

Time allocation for the next two years (starting 1st August 2004) is therefore as follows:

2 Months: Preparation (specifically learning knowledge elicitation, experimental and statistical analysis techniques) – this stage may have to be broken up during term time depending on availability of courses

3 Months: Stage 1 (Interviews with expert gamers and derivation of factors)
- 3 weeks: design of interviews (assuming knowledge elicitation techniques overlap with this stage)
- 1 week: preparation of interview material
- 6 weeks: execution of interviews
- 2 weeks: analysis and derivation of factors

3 Months: Stage 2 (Experts rate games with factors)
- 2 weeks: design of task
- 2 weeks: preparation of task materials
- 8 weeks: execution of rating task (hopefully conducted by email, so time allows for delays)

4 Months: Stage 3 (Large study collecting gaming preference)
- 4 weeks: design of study
- 4 weeks: preparation of questionnaire involved (some of this time may be better spent choosing which game to rate in stage 2)
- 8 weeks: conduction of study (whether in person or using the internet will depend on results of preparation and investigation into experimental techniques)

2 Months: Analysis of combination of stage 2 and stage 3 data

6 Months: Allowance for repetition of earlier stages

6 Months: Preparation of dissertation

---
26 Months total

6 Expected Outcome

Based on the differences of opinion expressed by game reviewers and game researchers (such as the Narratology/Ludology divide), I would strongly to find multiple distinct motivational factors, each of which has a strong following of players who prefer that factor to any of the others. The difficult part is whether the factors in question cover all (or all the relevant) likes and dislikes in such a way that the groupings in the data show such a result.

The form of the expected outcome is more straightforward; one or more motivational factors and an assessment of data showing how those rankings tend to cluster or group when crossed with gamers stated game preferences and expert opinion on how those games implement the motivational factors.

Appendix: Glossary

Game Genre	One of a number of broadly used categories of games, for example FPS, RPG, Action-Adventure. It is the assertion of this proposal that despite claims to the contrary, there is no industry standard set of game genres, only a large number of similar approximations.
FPS	First-Person Shooter. A game genre which is chiefly characterised by the player's first person perspective. Games like this typically focus on shooting (hence the name) but there is debate over whether this genre covers all games using a first-person perspective or just those that place an emphasis on gun-based violence.
RPG	Role-Playing Game. (More properly CRPG or Computer Role-Playing game to distinguish it from the original pen-and-paper roleplaying games. This latter abbreviation is very rarely used by computer game players who are in most cases unaware of the genealogy and do not see the need for the distinction, hence the pen-and-paper term). RPGs are a widely acknowledged but poorly defined category. Stating even the broadest degree of characterisation with any popular agreement is virtually impossible. An assortment of supposedly salient features of RPGs are detailed in section 2.
RTS	Real-Time Strategy. A game genre which is composed primarily of imitators of the game *Dune 2*. This is a fairly tightly defined genre, as games tend to feature very similar characteristics: the god-perspective control of a large number of troop units, the construction of buildings in some kind of base or settlement, and an emphasis on warfare. Some would include a much broader range of games in this category, such as all games which are controlled from a god perspective in real time.
MMORPG	Massively-Multiplayer Online Role-Playing Game. The significant feature of a MMORPG is that many players (sometimes hundreds or thousands) play in the same game at the same time, and are able to interact with each other in a single, huge environment. Most such games include the statistical and monster-killing elements of RPGs.
MMOG	Massively-Multiplayer Online Game. A term sometimes used to describe MMORPGs, although not necessarily with the implication that the game in question is not to be considered an RPG.

Bibliography

[Malone 1980]

What Makes Things Fun To Learn? A Study Of Intrinsically Motivating Computer Games
Thomas W Malone, August 1980, Palo Alto Research Centre

[Malone & Lepper 1987a]

Making Leaning Fun: A Taxonomy of Intrinsic Motivations for Learning, Thomas W Malone and Mark R Lepper from Aptitude, Learning and Instruction Vol 3: Conative and Affective Process Analyses, Lawrence Erlbaum, 1987

[Malone & Lepper 1987b]

Intrinsic Motivation and Instructional Effectiveness in Computer-Based Education, Mark R Lepper and Thomas W Malone from Aptitude, Learning and Instruction Vol 3: Conative and Affective Process Analyses, Lawrence Erlbaum, 1987

[Kline 1998]

Video Game Culture: Leisure and Play Preferences of B.C. Teens, Stephen Kline, 1998

http://www.media-awareness.ca/english/resources/research_documents/studies/video_games/video_game_culture.cfm

[Yee 2000]

"Alice in the Matrix", Nick Yee, 2000, Stanford University (online study)

http://www.nickyee.com/appeal/start.html

[Funk/Buchman 1996]

Children's Perceptions of Gender Differences in Social Approval for Playing Electronic Games, Jeanne B Funk, Debra B Buchman
From: Sex Roles, a Journal of Research, Vol 35, Part 3-4, pp 219-232

[Bringsjord 2001]

Is It Possible to Build Dramatically Compelling Interactive Digital Entertainment
(in the form, e.g., of computer games)?, Selmer Bringsjord

http://www.gamestudies.org/0101/bringsjord/index.html

[Eskelinen 2001]

The Gaming Situation, Markku Eskelinen

http://www.gamestudies.org/0101/eskelinen/

[Smith 2004]

Does gameplay have politics?, Jonas Heide Smith

http://www.game-research.com/art_gameplay_politics.asp

[Murray 1997]

Hamlet on the Holodeck (The Future of Narrative in Cyberspace), Janet Murray
Published by MIT Press, 1997

[Wolf 2001]

Genre and the Video Game
Chapter 6 of The Medium of the Video Game, by Mark J. P. Wolf

http://www.robinlionheart.com/gamedev/genres.xhtml

[Crawford 1982]

The Art of Computer Games Design, Chris Crawford, 1982

http://www.vancouver.wsu.edu/fac/peabody/game-book/Coverpage.html

[Adams 2004]

Designer's Notebook: Designing with Gameplay Modes and Flowboards

http://www.gamasutra.com/features/20040510/adams_01.shtml

[Planet Nintendo 2004]

Planet Nintendo: What is an RPG?

http://www.planetnintendo.com/lufia/ancientcave/whatisrpg.shtml

Last verified on 5/7/04

[RPGVault 2001]

RPGVault Feargus Urqhart interview

http://rpgvaultarchive.ign.com/features/interviews/bispt2.shtml

Last verified on 5/7/04

[GameSpy 2003]

GameSpy “Top 25: Most Overrated Games, Dungeon Siege”

http://archive.gamespy.com/articles/september03/25overrated/index12.shtml

Last verified on 5/7/04

[NGF 2003]

nin.vgf.com “The definition of an RPG”

http://nin.vgf.com/features/rpgdef/

Last verified on 5/7/04

Interestingly this article can also be found on a completely different website, under a different author’s name:

http://www.gamersjournal.com/rpgdef.html

Last verified on 5/7/04

Games

Diablo 2 (2000)
Developed by: Blizzard North
Published by: Blizzard Entertainment

The Elder Scrolls 3: Morrowind (2002)
Developed by: Bethesda Softworks
Published by: Ubi Soft

Baldur's Gate (1998)
Developed by: Bioware
Published by: Interplay

Star Wars: Knights of the Old Republic (2003)
Developed by: Bioware
Published by: LucasArts

Final Fantasy series (1987-2004)
Developed by: Square/Enix
Published by: Various

Metal Gear Solid (2000)
Developed by: Konami
Published by: Konami

Thief: The Dark Project (1998)
Developed by: Looking Glass Studios
Published by: Eidos

Fallout (1997)
Developed by: Black Isle Studios
Published by: Interplay

Pokemon series (1996-2004)
Devloped by: Game Freak
Published by: Nintendo

Dead or Alive: Xtreme Beach Volleyball (2003)
Designed by: Team Ninja
Published by: Tecmo

Planescape: Torment (1999)
Developed by: Black Isle Studios
Published by: Interplay

Half-Life (1998)
Devloped by: Valve
Published by: Sierra Entertainment