Emotional involvement in digital games

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Abstract: Digital games have become a pervasive aspect of the contemporary media landscape, yet our understanding of the way they engage players is limited. Experiential studies of games have the added complexity of plugging human consciousness in the cybernetic circuit that generates game-play. Quite simply games require input from players in order to occur. The nature of this cybernetic circuit means that the forms of engagement enabled by digital games are considerably different from those of other non-interactive media. This calls for theoretical models and analytical tools developed specifically with digital games in mind. This paper describes such a model which aims to enhance our understanding of digital game involvement. The model addresses a variety of experiential dimensions related to game-play, but will here focus primarily on the affective dimension.

Keywords: emotions; affect; involvement; games; immersion; engagement.

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1 Introduction

Digital games have evolved from the simplicity of game-play and representation of *Pong* to the complexity and richness of experience afforded by contemporary works like *Grand Theft Auto IV, World of Warcraft* and *Bioshock.* Players are increasingly turning to digital games for emotionally affective experiences which range in intensity from the peaceful pleasures of aesthetically beautiful games like *Flower*, to the darker and fast-paced action-horror setting of *F.E.A.R. 2*.

The effort required to engage with games places particular emphasis on the need for them to be compelling enough to sustain this effort. But, players will tend to engage with games which they perceive to be more than just mildly compelling, but satisfy, if not

surpass, the various cognitive and affective expectations they might have. The cognitive, emotional and kinaesthetic feedback loop that is formed between the game process and the player makes games particularly powerful means of affecting player's moods and emotional states.

In this paper, we will explore some ways in which digital games engage players emotionally by reference to the larger theoretical framework of this paper is part: The Player Involvement Model (Calleja, 2007). The Player Involvement Model has been developed through qualitative research performed during my doctoral dissertation. The model aims to clarify our understanding involvement and immersion in games by identifying the major experiential categories that foster involvement in digital games. These categories, which I refer to as 'dimensions' will be described briefly in order to give an outline of the structure of the model. This will be followed by a thorough exploration of the *affective involvement* dimension that relates to emotional engagement in games along with a consideration of the *affective involvement* dimension combines with other dimensions in the model.

2 The Player Involvement Model

The Player Involvement Model identifies these as six dimensions of involvement which correspond to the clusters of emphasis derived from analysis of the qualitative data accumulated during the doctoral research which yielded this model. The dimensions are not experienced in isolation but always in relation to each other, the separation here being made for the sake of analysis. The boundaries between dimensions are thus malleable and should not be taken as rigid separators, owing largely to the subjective modulations of the experiential dimension of game involvement. Applying the Player Involvement Model to a practical analysis does not require all the dimensions to be equally relevant to a specific game; for example, the intensity and complexity of spatial involvement in *Oblivion* (Bethesda Softworks LLC, 2006) or *Half-Life 2* (Valve Software, 2004b) far surpass those found in *Space Invaders* (Taito, 1978). Although the model presents the six dimensions separately, the forms of involvement they represent tend to occur in combination, with varying degrees of conscious or internalised attention being committed to each in a fluid and oscillating fashion. Each of these six dimensions is considered on two temporal phases: micro and macro involvement. When considering involvement in games it is crucial to differentiate between forms of engagement prevalent in the instance of game-play from those that keep players coming back to the game over a period of time.

The desire to game can vary widely between players, moods and contexts, so rather than giving an exhaustive list of such motivational factors, the macro-involvement phase of the model explores more general attractors to games and virtual environments. It also describes a form of 'off-line involvement' that plays an important role in keeping players engaged with a game and potentially lures them back to it. Off-line involvement refers to thinking about a particular game or aspect thereof when one is not playing. This can range from thinking of new combination of perks, weapons and add-ons to try out in *Call of Duty IV* (Infinity Ward, 2007) to talking about the previous night's raid in *World of Warcraft* (Blizzard Entertainment, 2004), or day-dreaming of exploring the picturesque hills of The Shire in *Lord of the Rings Online* (Turbine Inc., 2007). These specific examples of off-line involvement can be traced to more general aspects of long-term

engagement. Examples include: the ability to feel a sense of agency in an environment that gives immediate and clear feedback, participation in an ongoing story or the ability to modify one's mood through the affective power of games.

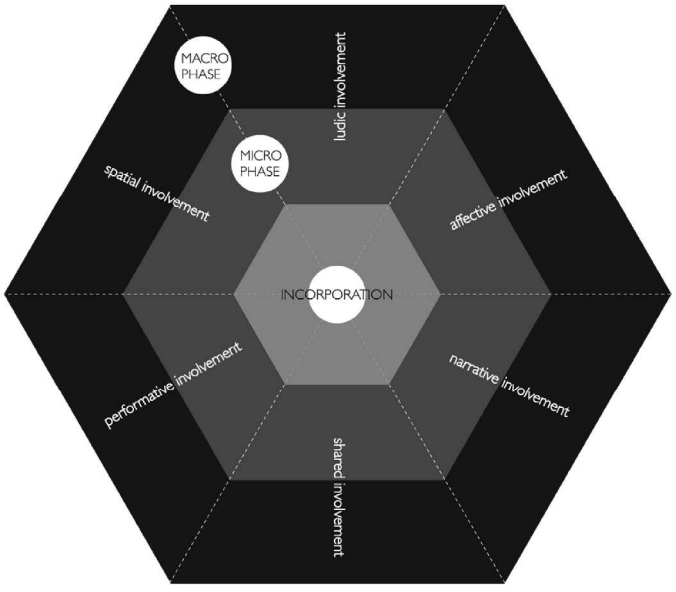
Micro-involvement, on the other hand, focuses on the imminent quality of involvement during game-play. I will argue that a crucial first step of forming a conceptual toolkit that would help in analysing and discussing game experience is to make a distinction between the general direction of attention towards a medium and the form of active involvement prevalent during game-play. Micro-involvement also describes a process of internalisation on each dimension that tends to be experienced over the space of engaging gaming sessions. With internalisation also comes a fluid blending of experiential states and in some occasions a sense of seamlessly inhabiting the game-space, which I refer to as 'incorporation'.[1] The replacement of immersion with incorporation is meant to shift the focus away from the binary view of here/there that pervades the literature on the subject. The focus is then on an internalised modality of experience that stems from the relationship between a variety of experiential states rather than a single binary state of here vs. there. The above relationships are exemplified by Figure 1 that will be referred to as 'The Player Involvement Model':

We will now take a brief look at each of the dimensions before delving into the main subject of this paper: affective involvement.

2.1 Spatial involvement

The *spatial involvement* dimension defines players' engagement with the spatial qualities of a virtual environment in terms of spatial control, navigation and exploration. It accounts for the process of internalising game-space that is a powerful factor in engaging players and giving the sense that they inhabit a place rather than merely perceiving a representation of space.

Figure 1 The Player Involvement Model



2.2 Narrative involvement

Narrative involvement deals with the engagement with story elements that have been written into the game as well as those that emerge from the players' interaction with it. It considers two inter-related dimensions of narrative in games: the narrative which is scripted into the game and the narrative that is generated from the ongoing interaction with the game world, its embedded objects and inhabitants along with the events that occur therein.

2.3 Kinaesthetic involvement

Kinaesthetic involvement relates to all modes of avatar or game-piece control in game environments, ranging from learning controls to the fluency of internalised movement. This dimension of involvement requires more conscious attention when the controls make themselves present, either because the player has not fully mastered them or because a situation demands a complex sequence of actions that are challenging to the player. Players of varying skills and preferences will be engaged in different kinds of movement. Some love going as fast as possible down a racing track. Others get lost executing multiple barrel rolls in World War 1 bi-planes. Some get involved in coordinating their actions with other players in frantically paced multiplayer first person shooters (FPSs) while others become most involved when sneaking patiently and silently in an area infested by enemies that are unaware of their presence. Others still enjoy the leisurely ride on their *World of Warcraft* (Blizzard Entertainment, 2004) mount, taking in the beautifully designed landscapes.

2.4 Shared involvement

Shared involvement deals with the engagement derived from awareness of and interaction with other agents in a game environment. These agents can be human or computer controlled and the interactions have here been discussed in terms of cohabitation, cooperation and competition. Thus, *Shared involvement* encompasses all aspects relating to being with other entities in a common environment, ranging from making collaborative battle strategies to discussing guild politics or simply being aware of the fact that actions are occurring in a social context.

2.5 Ludic involvement

The *ludic involvement* dimension expresses players' engagement with the choices made in the game, and the repercussions of those choices. These choices can be directed towards a goal stipulated by the game or established by the player or decided by a community of players, as described by Oriel above. The can also be spur of the moment decisions without a relation to an over-arching goal. Seasoned game players understand that well balanced game-systems emphasise the opportunity cost of any particular action taken. Without repercussions, actions lose their meaning and thus the emotional excitement (*affective involvement*) generated by their execution (*kinaesthetic involvement*).

2.6 Affective involvement

> When I am alone... it's when I am relaxed and have the sounds on. I like to pretend I am actually there. I used to do more before level 60. And mostly on Saturday and Sunday morning's when no one in the house would bother me. Now that I am [level] 60. I am busy doing chore stuff at those times. Like sunset time at Menethil Harbour while waiting on the boat to show up. Flying through Gadgetzan at night over the ocean and looking at the stars. Listening to the crunching snow under my feet in Winter Spring. Hearing crickets chirp at night when going through the forest. I wish I could remember if I hear the ocean at Azshara. I love the beach by my memory doesn't include that sound. Oh and the red and gold falling leaves in Azshara;2 so pretty. It's peaceful. I want to live there. I would rather live there than here cause it's beautiful there. (Oriel, World of Warcraft)

The intensely absorbing nature of games seems to attract equal measures of negative criticism and passionate excitement. One aspect of this absorbing quality is the potential of games to affect players emotionally. Although other media also serve this function, one important difference with digital games is the way they actively imply the player in the cybernetic feedback loop between human mind and machine. This active input on the part of the player creates the potential for a more intense emotional experience, whether a satisfying or frustrating one, than non-ergodic media allow. Thus, the cognitive, emotional and kinaesthetic feedback loop that is formed between the game process and the player makes games particularly powerful media for affecting player's moods and emotional states (Bryant and Davies, 2006; Grodal, 2000).

For those suffering from a lack of excitement, games offer an immediate channel of emotional arousal. Conversely, for those whose work or personal lives are too hectic, games' compelling nature makes them ideal for shifting one's attention to a performative domain that suits the players' needs: vent frustration through intense first person action, get absorbed in the cognitive challenge of a strategy game or stroll leisurely in aesthetically appealing landscapes. The appeal of beautifully rendered environments can be particularly powerful when contrasted with unattractive everyday surroundings.

Excitatory homeostasis is a term within media psychology that refers to 'the tendency of individuals to choose entertainment to achieve an optimal level of arousal' (Bryant and Davies, 2006, p.183). If one's emotional state is considered to be negative, under-stimulated persons will tend to choose media content that is arousing while over-stimulated persons tend to choose calmer media content. Games offer a variety of participatory means of affecting mood as well as allowing players to tweak game settings to bring about the desired affective change. If, for example, massively multiplayer online games (MMOGs) tend to limit the players' ability to change difficulty levels and other game settings, they make up for this by providing a wide variety of activities that can often suit different emotional needs.

Game design, like other forms of textual production, is imbued with the rhetorical strategies of affect. But unlike other forms of text this rhetorical power is emphasised by the conjunction of textual interpretation and the performed practice of gaming. The recursive input/output process inherent to game environment interaction has the potential to deliver an experience that extends affect beyond that allowed by other non-ergodic media. Designers aim to capitalise on these affective qualities by selling a packaged experience that meets the expectations of buyers while engaging the emotions the game aims to arouse.

The affective qualities of digital games can exert a powerful motivational draw on their players. The rhetorical strategies employed in their design are geared towards creating specific emotional responses. However, the effects they are intended to have are by no means those that materialise in the actual gaming instance. This can be due to a variety of factors ranging from a lack of interest towards the particular game or game genre, interruptions from other sources demanding attention, or quite simply, the personal interpretation of represented events that diverges from those intended by designers because of reasons personal to the player, or ineffective design. Although designers cannot dictate absolutely the specific effects of their creations, the design choices made will tend to encourage a particular kind of reaction or emotional response from the players.

A significant portion of this rhetorical power can be associated with the mode of representation of the particular medium. In the case of the moment by moment involvement with digital games the main vehicles of representational affect are graphics, audio effects and the physics built into the virtual environment. A number of theorists and designers have rightly argued that graphical power is not what makes games compelling. Although it is true that the quality and beauty of visual representation does not by itself make a compelling game, the evocative power of graphics and sound should not be discounted.

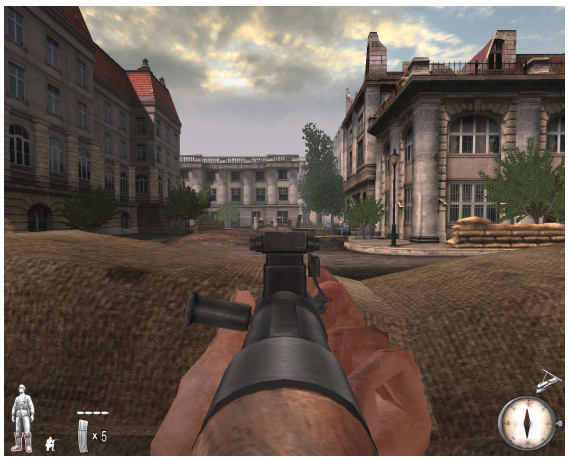
Graphics are often the first aspect of a digital game to capture the player's attention, both when shopping for a new game and upon first loading the chosen title up. It is no coincidence that all major game reviewing sites like www.gamespot.com and www.ign.com, along with the game publishers themselves, include a link to a screenshot gallery. As the majority of the participants stated, attractive graphics can lure them towards game titles they would not have otherwise considered. Whether the quality of game-play keeps them interested is another matter altogether, but for the game-play to be trialled, some initial hook needs to be present, and often graphics serve that purpose. The graphical style of a game gives a good idea of the kind of genre the game draws from, the era and setting. Screenshots splattered with gore and body parts set in dark abandoned locations are not going to appeal to someone looking for a cheerful, light game for their young daughter.

Some genres are more dependent on specific forms of graphical and audio representation than others. An FPS set in World War 2 will tend to reproduce a sense of being in the period and will thus depend on a degree of verisimilitude, if not to the actual reality of the period, to the way it is represented in the media. The distinction between the two is seldom made. Let us compare two FPSs set in World War 2. *Medal of Honour: Allied Assault* (2015 Inc., 2002), for example, draws its visual style strongly from contemporary World War 2 Hollywood movies such as *Saving Private Ryan* (Spielberg, 1998) and *Pearl Harbour* (Bay, 2001). The lighting and palette employed in the game as well as the dramatic action portrayed on screen are reminiscent of these movies, with several scenes reproduced wholesale either in cut-scenes or as playable level-sections. The aim here is to appeal to a popular movie rendition of World War 2, with only a limited concern for reproducing functional elements. *Red Orchestra: Ostfront 41-45* (Tripwire Interactive, 2006) is another FPS set in World War 2. The graphical style and audio effects both convey a stronger sense of historical accuracy. Unlike *Medal of Honour* the interface information provided is limited to the level of the avatar's fatigue, bodily hit-locations and the number of ammo clips remaining. Unlike the majority of FPSs, no crosshairs are provided making it almost impossible to hit a target further than

a meter or so away without bringing the weapon's iron sites up to one's point of view. This also causes players to slow or halt their movement. Unlike FPSs like *Medal of Honour* or *Counter-Strike Source* (Valve Software, 2004a), trying to shoot accurately while moving is next to impossible often requiring a kneeling or prone stance in order to compensate for the weapon's recoil.

The majority of infantry in *Red Orchestra* carry single-shot rifles, which require the player to pull back a catch after every shot in order to be able to shoot again (Figure 2). Although set in the same era, *Medal of Honour* includes a cross-hair in the middle of the screen, making it possible to move and shoot accurately, even with automatic weapons. *Red Orchestra* also pays closer attention to reproducing uniforms, weapons and objects true to the period, down to the smallest detail, as opposed to *Medal of Honour* whose settings, uniforms and objects are only approximations of the period they are meant to represent. Graphical style, audio effects quality and physics come together to create a very different experience in these two games coming out of the same genre (FPS) and set in the same era (World War 2).

Figure 2 Iron sights aiming in *Red Orchestra* makes shooting more challenging than more forgiving games, heightening the sense of urgency delivered by the avatar's panic when under fire (see online version for colours)



Note: Conveyed through screen shaking and sound effects.

Let us look at a practical example of the affective impact of combining graphics, audio and environmental physics. Multiplayer FPS game designers have been at pains to instil a need for team-work through the use of suppressing fire. The idea here is that one player shoots at the cover of an enemy player, or group of players, that are covering an area the assailants want to cross. When the player providing suppressing fire, usually with an automatic weapon, shoots bursts at the enemy cover, his/her team-mates rush from cover to cover, advancing on the desired objective. The problem is that the effectiveness of the cover will depend a lot on the ability of the person providing the suppressing fire. But the whole point of suppressing fire is not necessarily to hit the opponent but to make it both practically harder for them to shoot at those being covered and create a certain sense of apprehension or impending danger. *Red Orchestra* manages this better than most other FPS game before it by combining graphical distortion and loud audio effects with

environmental physics, resulting in both a functional impediment and a heightened sense of urgency, if not panic. When a piece of cover is shot, the projectiles impacting it deliver a disorientating loud noise (as is the case with a lot of other FPSs), making it harder to register what is going on in the vicinity through aural orientation, a crucial part of spatial awareness in FPS games. If the players behind cover being shot at try to lean out and shoot their assailants, the screen blurs and shakes, making it incredibly difficult to aim accurately. This is made more challenging when the piece of cover in question consists of destructible materials that generate dust and fragments when hit such as stone walls or wooden window sills. Combining visual impediments with the already challenging mode of aiming through iron sights and narrow hit boxes on targets, creates a functionally viable use of suppressing fire. This combination of graphical, audio and physics techniques also tends to increase excitement through a heightened sense of urgency at stopping the suppressing fire-giver's team-mates from reaching a position which would offer clear aim to the players behind cover. The affective implications of such a technique thus influence the ludic and kinaesthetic aspects of the game. A number of participants have discussed the evocative, mood-changing powers of the aesthetic beauty of MMOGs. The dependence of these virtual worlds on extended participation of players in their vast geographical expanses means that their designers need to provide places which inspire positive emotions in their inhabitants. The creators of *World of Warcraft* (Blizzard Entertainment, 2004) were very aware of the effect aesthetics have on players, creating attractive regions with varying palettes of tastefully blended colours and a design policy that aimed to appeal to the masses (Figure 3). About eight million paying subscribers confirm the wisdom of Blizzard's design. There is a particular kind of attraction to inhabiting beautiful landscapes wherein one can roam, allowing for more involving experiences than viewing attractive images in non-ergodic media. In the words of one of the research participants, Oriel: "it's better than looking at a pretty picture… cause you can explore inside the picture".

Figure 3 Twilight Grove in *World of Warcraft*: an example of the beautiful landscapes described by Oriel and other research participants (see online version for colours)

But some players find other forms of affective arousal appealing. The action FPS *F.E.A.R.* (Monolith Inc., 2005) is designed to maximise excitement by combining the captivating, fast paced characteristics of FPSs with hair-raising techniques borrowed from the horror movie genre. Players progress through *F.E.A.R.* by following a linear plotline that takes them from one environment to another. Although there is no possibility of veering from the episodic nature of level progression, the environments themselves can be explored in any way the player likes with specific events triggered the first time an area is crossed. The game alternates between combat situations and paranormal horror scenes which may require a specific reaction from the player to overcome, or less active sequences which are meant to further the plot and often make players jump three feet off their seats.

The combat sequences are embellished by the AI of the computer-controlled agents, who duck, take cover and collaborate to eliminate the player. If the player takes cover behind a wall corner and peaks out to take a quick pot-shot only to duck back into cover, the AI agents will call for covering fire while one or two of them advance on the player, making it harder to mow down the advancing agents without taking damage. In most FPS action games, once an area has been cleared of AI agents, players do not need to worry about their backs, focusing on clearing out new areas. The only exception to this is when a player attains an objective and needs to go back through a previously traversed area, which is now filled with new enemies. But AI agents do not normally try to sneak up from behind the player and knock him out with a good rifle-butting, which is a common occurrence in a game of *F.E.A.R.* These flanking attacks are not predetermined or triggered by traversal of an area, but occur as a result of the AI adapting to the player's behaviour. The possibility of being attacked from areas other than the location where the present combat situation was initiated leaves players in an alerted state, watching their backs more carefully and involving them more intensely on the *spatial* and *ludic involvement* dimensions of the game (Figure 4).

Figure 4 Alternating combat and horror segments in *F.E.A.R.* work off each other to create stimulate a state of perpetual alertness in the player which allows the game to deliver a sense of the uncanny (see online version for colours)

The intense combat situations serve to increase the affective power of the horror sequences that follow them. When the player is moving cautiously through a corridor and peaking around every corner to avoid being ambushed, hearing a noise behind her tends to be interpreted as an enemy approaching causing the player to turn around (and often letting off a few rounds of ammo in mid air). Seeing objects flying off shelves conflicts with the operative mode of interpretation required by a combat situation where survival

depends on objects and entities behaving as expected. The light bulbs start swaying and flickering, adding to the sense of eeriness, and when the player turns back to where he was headed initially a little girl suddenly appears out of the shadows scampering away on all fours. By first increasing emotional affect through fast paced combat sequences and then changing the way objects behave in the game world, the game creates an intensified sense of shock and *uncanniness*.

The degree of unpredictability of AI agents in *F.E.A.R.* is used to even greater affective means in *Left 4 Dead* (Valve Corporation, 2008). *Left 4 Dead* includes an AI agent that controls the pacing of the game called 'The Director'. It generates enemies, weapons, ammunition and other objects depending on the current state and locations of players aiming to heighten dramatic tension and emotional investment from the part of the players. The Director also attempts to create tension by activating audio segments, visual effects and character voice-overs. These can both help or hinder players, while adding to the tense and dark atmosphere of the game. Like *F.E.A.R.*, the unpredictability of *Left 4 Dead's* assailants keeps players constantly on their toes. Even if an area has been cleared of baddies, nothing is going to stop the Director from bursting another horde through a nearby wall, if the players slow down to a calm pace.

Left 4 Dead is an intensely cooperative multiplayer game, where players need to stick together and protect each other to survive. The game heightens the panic delivered by the unpredictability of enemies' location through the special abilities it bestows to the special zombies. Players encounter your garden variety zombie in every room and street corner. These run at the player doing what zombies do best: hacking and biting for dear un-life. But there are also special kinds of zombies each with a single power that can be devastating for the individual player, if unprotected by the rest of his team-mates. The Hunter, for example, leaps on the survivors (player controlled avatars) and knocks them down to the ground, hacking rapidly while squatting over them. If the Hunter lands on one of the players they cannot get him off themselves; they need another player to shoot or gun-butt the Hunter off them. This creates considerably panic with players shouting to their friends to rid them of the feeding Hunter while trying to explain where they are pinned down. The issue tends to be complicated by the fact that the other players are being attacked by other zombies and the lack of clear lighting found in the game environment. *Left 4 Dead* creates such an evocative experience because its rhetorical strategies of affect combine the aesthetic and systemic dimensions tightly with the subjectivity of the engaged players. The tightly knit collaborative experience further heightens the emotional impact of the game since players need to communicate effectively while under ergodic and emotional pressure.

2.7 Combining dimensions

As outlined at the start of this paper, the dimensions of the Player Involvement Model blend together fluidly during the game-playing experience. The dimensions of the model are not meant to be considered in isolation, but as blended combinations. This section will give a few examples of how the *affective involvement* dimension combines with two other dimensions: *shared involvement* and *ludic involvement*.

Online multi-player gaming is on the rise in every segment of the game industry. The presence of other human players in a game environment can deepen engagement considerably. Whether it is in cooperation or in competition, other players tend to

enhance the excitement or frustration of the gaming experience. As participants have commented, the presence of other players can be as frustrating as it can be exciting.

The intensification of *shared involvement* tends to also intensify *affective involvement*. At least at higher levels of dexterous ability, a game of *FIFA 09* (EA Canada, 2008) against a friend is going to, in all likelihood, result in stronger emotional experience in the result than a similar friendly game against the machine. If the game is watched by an audience of common friends, the excitement will tend to be even higher. When the competition is extended from two players to a few hundred or thousand as is the case in player vs. player (PvP) MMOGs the excitement is greatly enhanced.

Bladerunner, one of the research participants from the *Planetside* (Sony Online Entertainment, 2003) MMOG, claims that the more players are collaborating together the higher the probability of the experience being frustrating or emotionally rewarding. Like other participants he feels that the risk of frustration is well worth it when a team is working together fluidly and overcoming a tough human opposition. Bladerunner calls this state of collaborative excitement the 'megafized feeling'. Here affective involvement becomes so intense because the situation is both collaborative and competitive, with large teams (often more than hundred players) on each side vying for victory. If, for example, after 4 hours of besieging a fortress without progress a small team of players manages to infiltrate the fortress and turn the tide of battle, the excitement of their exploits is greatly enhanced by the fact that they are influencing so many other players, both on their own and the opposing factions.

In cases of human copresence in a game environment, *shared involvement* thus enhances affective involvement in ways which are not necessarily perceived as positive by players but still have the potential to generate more intense emotional experiences than the presence of computer-controlled agents.

Another dimension which often influences the *affective involvement* dimension is *ludic involvement*. In his list of the defining characteristics of games, Juul (2005) includes the need for the player to be attached to the outcome of the game. Although the notion of a quantifiable outcome as a defining feature of games can be problematic since a number of digital games do not have distinct quantifiable outcomes, we can here take 'outcome' as referring to the outcome of pursuing a goal, wherever that goal lies on the hierarchy of goals present in the game. The emotional attachment of the players to the outcome of a primary or sub-goal that Juul's argument points to is a great example of the combination of *ludic* and *affective involvement* dimensions:

> The emotional attachment of the player to the outcome is a psychological feature of the game activity. A player may feel genuinely happy if he or she wins, and unhappy if he or she loses. Curiously, this is not just related to player effort: a player may still feel happy when winning a game of pure chance (40).

Rather than considering winning and losing, we can focus on the emotional attachment to achieving or failing to achieve goals. First of all this allows us to discuss the issue throughout game-play, instead of an end result effect. Secondly, we are not constrained with having game-winning conditions, which does not apply to a number of game environments, particularly ones which have an open world structure such as *SimCity* (Maxis Software, 1989), *Mount and Blade* (Tale Worlds, 2008) and the majority of MMOGs.

Goal hierarchies create a structure of emotional response from engaged players by identifying clear signposts that allow players to appraise how they are faring in the game

(Järvinen, 2008). The successful completion of a goal tends to create a sense of satisfaction and elation in players which is often heightened by a number of factors such as the difficulty of achieving the goal, the time invested in its pursuit, the repercussions of its attainment on the rest of the game and, more importantly, on other players and the significance attached to the goal by the game community or immediate audience. Although specific cases need to be analysed more carefully, a general rule of thumb is that the higher in the (subjective player's) hierarchy a goal is the more emotion is attached to it.

To illustrate the above, let us take a session in an online multi-player game of Capture the Flag of *Call of Duty V* (Treyarch, 2008). A player will tend to be most emotionally affected when she succeeds in capturing the enemy flag and running with it to her base, or when she stops an opponent from taking back her own side's captured flag. These correspond to the higher end goals in this game mode and thus are important determinants of success or failure that are pursued and validated by the majority of players. If the flag capture is particularly difficult, because, say, there are a lot of skilled players on the same map, the player will be more elated at succeeding. If the game has been raging for half an hour and the two sides are tied with the game ending in a few seconds, the capture becomes even more emotionally affective. If this is taking place in the context of a tournament, it becomes even more exciting, and so on. When higher order goals are introduced and linked to the immediate sub-goal, the emotional excitement rises because more is at stake for the competing players.

I hope that these examples have shown the importance of considering the ways in which dimensions combine both in analysis of games and when using the Player Involvement Model as a heuristic tool for design. Players devote variable attention to different dimensions at different times, and since these attention resources are limited the more conscious effort is given to one dimension the less can be given to others. Through engagement with the game, players will tend to internalise the respective dimensions, making it easier for them to combine multiple dimensions. But it is often the case that conscious attention needs to be redirected towards a dimension that requires the player's focus at that particular time. This means that the blending of, and movement in and out of conscious attention directed to each dimension changes rapidly and fluidly.

3 Conclusion: games as designed (affective) experiences

Games like *F.E.A.R.* and *Left 4 Dead* play on the tension of dark spaces and impending danger. As the success of both games confirm, a large number of players enjoy the high-adrenalin stimulation the two games generate. But as discussed earlier in this paper, this is only one form of affective involvement games enable. Players look for different sorts of affective experiences in games: the pleasure of aesthetically beautiful and peaceful places like those described by the *World of Warcraft* participants, the appeal of visual styles borrowed from other popular media or the exhilaration brought on by startling effects of horror games such as *F.E.A.R.* At times, players will sacrifice great game-play for the chance to have experiences in specific settings they find appealing. Reiterating a point made above, more powerful graphics, audio and physics might not be a determinant of good game design, but the appeal of representational strategies points to other considerations. Salen and Zimmerman (2003) are among a number of game designers who deplore the trend towards improving representation at the cost of innovations in

design. There is no doubt that these game designers are right from the perspective of creating interesting game-systems. But we must not forget that digital games do not only attract players looking for interesting and cleverly designed game-systems, they also attract armies of players whose interest is to live a specific, packaged, experience: a Formula One driver, a World War 2 sniper, the manager of a football team or a murder victim on the Orient Express. The attraction towards aesthetic dimensions of games is often informed by expectations borne from other media. This emphasises the fact that digital games are, unlike table-top board-games, not only game-systems, but also more importantly, digitally mediated experiences that aim to satisfy the desires generated by movies, literature or free-ranging fantasy.

References

2015 Inc. (2002) *Medal of Honour: Allied Assault*. PC: Electronic Arts.

Bay, M. (2001) *Pearl Harbour [Film]*. USA: Jerry Bruckheimer Films & Touchstone Pictures.

Bethesda Softworks LLC (2006) *The Elder Scrolls iv: Oblivion*. PC: 2K Games.

Blizzard Entertainment (2004) *World of Warcraft*. PC: Vivendi Universal.

Bryant, J. and Davies, J. (2006) 'Selective exposure to video games', in P. Vorderer and J. Bryant (Eds.), *Playing Video Games: Motives, Responses, and Consequences*. Mahwah, NJ: Lawrence Erlbaum Associates, pp.xiv, 464.

Calleja, G. (2007) 'Digital games as designed experience: reframing the concept of immersion', Unpublished Doctoral Thesis, Victoria University of Wellington, Wellington.

EA Canada (2008) *Fifa 2009*. XBOX 360: EA Sports.

Grodal, T. (2000) 'Video games and the pleasures of control', in D. Zillmann and P. Vorderer (Eds.), *Media Entertainment: The Psychology of its Appeal*. Mahwah, NJ: Lawrence Erlbaum Associates.

Infinity Ward (2007) *Call of Duty IV*. PC: Activision.

Juul, J. (2005) *Half-Real: Video Games between Real Rules and Fictional Worlds*. Cambridge, Mass: MIT Press.

Järvinen, A. (2008) *Games without Frontiers: Theories and Methods for Game Studies and Design*. University of Tampere.

Maxis Software (1989) *Simcity*. PC: Electronic Arts.

Monolith Inc. (2005) *F.E.A.R*. PC: Vivendi Universal.

Salen, K. and Zimmerman, E. (2003) *Rules of Play: Game Design Fundamentals*. Cambridge, MA: MIT Press.

Sony Online Entertainment (2003) *Planetside*. PC: Sony Online Entertainment.

Spielberg, S. (1998) *Saving Private Ryan [Film]*. USA: Dreamworks.

Taito (1978) *Space Invaders*. Arcade: Midway.

Tale Worlds (2008) *Mount and Blade*. PC: Paradox Interactive.

Treyarch (2008) *Call of Duty v: World at War*. PC: Activision.

Tripwire Interactive (2006) *Red Orchestra: Ostfront 41-45*. PC: Valve Software.

Turbine Inc. (2007) *The Lord of the Rings Online: Shadows of Angmar*. PC: Codemasters.

Valve Corporation (2008) *Left 4 Dead*. PC: Valve Corporation.

Valve Software (2004a) *Counter-Strike Source*. PC: Vivendi Universal Games.

Valve Software (2004b) *Half-Life 2*. PC: Vivendi Universal.

Notes

[1] The concept of incorporation is an integral part of the model and in many senses can be seen as its culmination. Due to the limited scope and length of this paper, I will not, however, describe this concept. For further reading please refer to *In-Game: from Immersion to Incorporation*, available from MIT Press from Spring 2011.

[2] Menethil harbour, Gadzgetan, Winterspring and Azshara are areas in *World of Warcraft.*