PLAYER PROFILES: UNDERSTANDING IMMERSION AND PLAYER EXPERIENCE IN DIGITAL GAMES

by

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(Under the direction of Alison Alexander)

ABSTRACT

Videogames are an experiential medium; in order to gauge how much a consumer will enjoy a game, he must play it for himself. Unlike a lawnmower or digital clock, the consumer cannot adequately discern the level of utility he will enjoy from his new videogame purchase simply by reading the features and benefits listed on the package label. For the average consumer, $59.99 is a rather large gamble to take on a purchase that may hold little to no utility. Immersion—an experiential phenomenon experienced commonly in the best videogames—is the goal for many players and thus for designers, yet we know very little about the nature of the immersive experience and we have yet to identify the elements that will reliably produce such an experience. This thesis examines the previously conducted research about immersion in videogames, and through analysis of previous works and interviews with dedicated gamers develops a theory of "player preference profiles" to explain how players relate to their favorite games.

INDEX WORDS: Videogames, involvement, engagement, immersion, ludology, gamer, player preference profile

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DEDICATION

Without the assistance of several individuals, this paper would never have become a reality, and many thanks are owed.

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To Sam. Yes, we can finally play Crazy Eights now.

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Chapter 1

Introduction and Literature Review

In this first chapter, I will describe the existing literature in the field that has explored the concept of immersion, and made initial attempts to operationalize it. These theoretical frameworks are useful for understanding how Calleja's model fits into the broader literature on immersion. These frameworks, in conversation with Calleja's research, are foundational to the development of player preference profiles.

Introduction to Immersion

Mentioning the term *Immersion* to someone well-versed in videogames, whether within the industry or an avid consumer, instantly communicates a complicated psychological state of mind in one succinct term. Gamers and designers alike can readily identify the state of being immersed, but only by describing their personal engagement with the medium at the moment of immersion can they explain it to you. Though this term is highly significant in games studies, there has been a struggle to define it; one of the best attempts at a definition comes from Janet Murray:

> A stirring narrative in any medium can be experienced as a virtual reality because our brains are programmed to tune into stories with an intensity that can obliterate the world around us…. The experience of being transported to an elaborately simulated place is pleasurable in itself, regardless of the fantasy content. We refer to this experience as immersion. Immersion is a metaphorical term derived from the physical experience of being submerged in water. We seek the same feeling from a psychologically immersive experience that we do from a plunge in the ocean or swimming pool: the sensation of being surrounded by a completely other reality, as different as water is from air, that takes over all of our attention, our whole perceptual apparatus…in a participatory medium, immersion implies

> learning to swim, to do the things that the new environment makes possible…the enjoyment of immersion as a participatory activity (1997, pp.98-99).

Aside from this descriptive explanation, no single author or measure adequately establishes a defined construct of what immersion is, if there are different levels or types of immersion, and how to quantify those phenomena if there are. Several authors note this dilution of the meaning of the term immersion, including one researcher who "suggest[s] that immersion has become an excessively vague, all-inclusive concept" (McMahan, 2003, p.67), and researchers whose expressed intent is to disambiguate the meaning of immersion (Jennett et al, 2008). Some authors link the structure of narrative schema to the development of immersion (Douglas & Hargadon, 2000), but fail to develop their models from the experiences of the player. Other works reference immersion, presence, engagement, or involvement, but make no clear attempt to define them (Johnson & Wiles, 2003; Jones, 1998; Lombard & Ditton, 1997; Radford, 2000; Sweetser & Johnson, 2004; Yee, 2006) or define them in ways that do not translate to other works in the field (Douglas & Hargadon, 2004).

Despite these difficulties, progress is being made in exploring the notion of immersion, or as it is sometimes called, engagement. Here, I will review the existing literature on videogames and immersion, highlighting those authors who make strides to define this difficult concept and thus highlight the increasing sense of disorientation that is born from the lack of a unified theory of game engagement.

Flow

One of the most telling themes in the videogames and immersion literature is the lack of commonality in citations. When sifting through the literature on immersion, there are an

abundance of ideas from perspectives of designers, researchers, and players, but very little uniformity of theory. As a matter of fact, only one source is commonly cited throughout nearly all of the literature: Mihaly Csikszentmihalyi and his concept of flow. According to Csikszentmihalyi, *flow* is a state of complete absorption in a task, brought about by the confluence of several simultaneous factors—when each of these pieces falls precisely into place, a person can abandon the sense of self, and become wholly engaged in the current activity (1997). There are several important defining aspects of these "flow activities." Clear, definable goals allow the actor to ignore the confusion and interpretation inherent in daily life, and enter into a state of complete focus. Immediate feedback, usually absent from the day-to-day grind of home or work, rewards those engaged in flow activities and help maintain the state. Most importantly, though, is the balance of challenges and abilities; when difficult challenges stretch an individual's skills and talents to the utmost, then that individual can enter the flow state (Csikszentmihalyi, 1997). Flow affects the perception of reality:

> When goals are clear, feedback relevant, and challenges and skills are in balance, attention becomes ordered and fully invested. Because of the total demand on psychic energy, a person in flow is completely focused. There is no space in consciousness for distracting thoughts, irrelevant feelings. Self-consciousness disappears, yet one feels stronger than usual. The sense of time is distorted: hours seem to pass by in minutes. When a person's entire being is stretched in the full functioning of body and mind, whatever one does becomes worth doing for its own sake; living becomes its own justification. In the harmonious focusing of physical and psychic energy, life finally comes into its own. (Csikszentmihalyi, 1997, pp.31-32)

This state of harmony requires clear goals, immediate feedback, and challenging activities; it is not difficult to see how videogames can induce a flow state in players. Videogames are an ergodic medium (Aarseth, 1997), meaning they require active participation from the player. Videogames also provide all of the elements necessary for a flow experience; many games today are now designed with scalable difficulty levels, allowing players to set their

own optimal level of challenge difficulty or automating that process in order to maintain the flow state. Most importantly for application to videogames, however, is the similarity between the experiences of flow and immersion. Videogames possess many of the qualities that Csikszentmihalyi indicates encourage flow, and it is no surprise that researchers note that the two are quite likely related.

GameFlow

While some authors explicitly link flow to videogames, the most direct link comes from Sweetser and Wyeth's model of GameFlow, which they develop not as a study of immersion, but as a practical measure of game enjoyment. They create their own model for application to videogames using eight conditions, developed from Csikszentmihalyi's work. While the model of GameFlow does not focus explicitly on immersive experiences, immersion is listed as one of the eight characteristics of flow in their new model. The authors define immersion through player reaction:

> - Players should become less aware of their surroundings
> - Players should become less self-aware and less worried about everyday life or self
> - Players should experience an altered sense of time
> - Players should feel emotionally involved in the game
> - Players should feel viscerally involved in the game. (Sweetser and Wyeth, 2005, p.7)

These attributes are indicators of immersion, but Sweetser and Wyeth do not infer or discuss the causes of immersion. Later, after reviewing two popular games, the authors discuss each of the various elements of GameFlow. The authors claim that "Immersion is achieved through concentration (i.e. tasks, monitoring, visual and auditory stimuli), feeling a connection to heroes, units, and the story, feeling excited by the pace of the game and no periods where the

player is inactive or waiting" (Sweetser & Wyeth, 2005, p.14). While these are good observations based upon expert review, players themselves are never interviewed about these elements, and the authors themselves acknowledge that player input is necessary to validate their findings (Sweetser & Wyeth, 2005).

Even in these flow studies there is confusion over the terminology used to measure involvement; in a discussion of games and flow, Johnson and Wiles (2003) reference a table from Jones that equates the "Deep but effortless involvement" aspect of flow with "[S]emi-automatic immersion…commonly reported by game-players" (Jones, 1998, quoted in Johnson & Wiles, 2003, p.13), and add that engagement should also be considered, citing an additional study that suggests "Jones' list should include reference to the sense of engagement experienced during flow. A strong sense of engagement is a commonly reported experience of game-players" (Draper, 2000, quoted in Johnson & Wiles, 2003, p.13)). The terms *engagement*, *involvement*, and *immersion* begin to emerge as variations on a theme—players report states of at least partially-automatic deep absorption into game play. No clear difference exists between the terms at this point, nor does a clear description of the exact phenomenon which they reference.

Presence

Another influential concept in media literature related to immersion is *presence*. Typically defined as "the subjective feeling of existence within a given environment" (Heeter, 1992; Sheridan,1992; Slater, Usoh, and Steed, 1994; Steuer, 1992; as quoted in Zahorik and Jenison, 1998, p.78), which originates from Minsky's idea of telepresence, as originally intended to refer to the use of electronic equipment to manipulate the physical environment (1980). Applied to the study and development of virtual worlds, several authors note that *presence* has

been used interchangeably and sometimes inconsistently with *immersion* (Slater, 2003, and Waterworth & Waterworth, 2003, as cited in Calleja, 2007), and Slater attempts to reconcile the two terms by defining presence wholly in terms of form:

> Suppose you shut your eyes and try out someone's quadraphonic sound system which is playing some music. "Wow!" you say, "that's just like being in the theatre where the orchestra is playing." That statement is a sign of presence. You then go on to say, "But the music is really uninteresting and after a few moments my mind started to drift and I lost interest." That second statement is nothing to do with presence. You would not conclude, because the music is uninteresting that you did not have the illusion of being in the theatre listening to the orchestra. The first statement is about form. The second statement is about content. (Slater, 2003)

The problem with defining presence in such a manner, especially in the case of digital games, is the lack of consideration for player agency. A fundamental component to the sense of inhabiting a virtual world is the ability to act in that world; discounting the impact of content and interpretation on the feeling of presence is tantamount to ignoring its key aspects and claiming that technological fidelity is all that is required for subjects to be forced into a sense of presence (Calleja, 2007). This is also a good place to reference another potentially troublesome issue in Slater's description: what designers Salen and Zimmerman refer to as the "immersive fallacy" (2004). Presence and immersion are commonly thought to be dependent upon the level of realistic simulation, through auditory and visual representations indistinguishable from reality. However, as Salen and Zimmerman point out, immersion can be experienced in *Tetris* (Pajitnov, 1985), a game of manipulating abstract shapes, and presence is also often reported in *World of Warcraft* (Blizzard, 2004), a game which does not rely on the power of hyper-realistic graphics and sounds. While presence establishes the notion of inhabitation within digital worlds, this theory does not fully explore the nature of immersion, and as such presence and immersion are not fully synonymous. A more fundamentally sound foundation, and preferably one that consults

the gamers themselves about their subjective experiences, is needed to develop a firm theory of immersion.

Player Experience

Other studies that do, in fact, consult gamers about immersion as part of their play experiences produce interesting results as well. Schull, in her work on casino gambling and AutoPlay, puts to task the notion that play and fun are necessarily related:

> "Players insert money, wait for credits to register, then simply press the AutoPlay button and let the game play itself. The elements of skill and choice, said by game developers to distinguish new from old games, slip back into the raw chance of the traditional or 'predigital' slot machine – except that now players do not even pull the handle themselves: instead they merely watch as the credit meter goes up and down. … 'In South Carolina, they would load up credits on poker machines, push the play button down and jam a toothpick in there.'" (Schull, 2005, p.78)

Schull illustrates the need for the academic literature to develop an understanding of play motivations that extends beyond "because games are fun." By consulting gamers and analyzing their opinions and play experiences, a more accurate model can be developed.

Brown and Cairns interviewed several gamers in order to provide a definition for immersion derived from actual player experience, and found that while all of the gamers could describe immersion, it is not a single, static phenomenon, but instead a fluid experience that shifts from moment to moment (2004). Also, though the authors admit their work is only an initial entry into studying immersion, they describe immersion as a series of stages of engagement. Since most of their participants discussed the issues that break immersion, it is logical to develop a model involved in overcoming these barriers. This finding is consistent with other research which suggests that the removal of distractions promotes immersion (Johnson & Wiles, 2003). Barriers which must be overcome include:

For Engagement, the first level:
Access—players must be able to easily control the events in the game;
Investment—players must invest significant amounts of time, effort, and concentration;
For Engrossment, the second level:
Emotional Attachment—players are affected emotionally by the game;
Distraction—players remove or ignore external distractions from the game;
For Total Immersion, the final level:
Empathy—extreme attachment to the game world, narrative, and/or characters;
Atmosphere—relevance of plot, graphics, and sounds to the play experience. (Brown & Cairns, 2004)

Describing immersion by the observations above is quite similar, metaphorically speaking, to diagnosing an illness based upon physical symptoms; the observations indicate what the experience is, but not what causes it. Identifying the "symptoms" of immersive experience is a valuable first step in discovering its cause, but Brown & Cairns do not continue on to that next stage.

The most important contributions of this study are the subjective nature of each of the above descriptors. Immersion is beginning to emerge in the literature as not simply an aspect of a game, but a matching of player personality with game elements that allows a distinctly unique experience for each individual. Also important are the two observations that immersion is scalable and thus a fluid experience that is not easily quantified, and that immersion is not necessary for enjoyment, but that immersive experiences are enjoyable (Brown & Cairns, 2004). These observations highlight the personal nature of immersion, as well as outlining the difficulty that researchers face when attempting to give a simple definition to the complex phenomenon of immersion.

Concrete Measures

Building upon the foundation provided by Brown and Cairns, Jennett et al. (2008) set out to provide a concrete measure for immersion as developed by Brown and Cairns (2004). In their examination, Jennett et al. designed and conducted three separate experiments in order to examine the feasibility of producing concrete measures of immersion. In the first experiment, participants were given a simple puzzle of unusual type, and the time required for completion was recorded. Then the experimental group played an immersive computer game, *Half Life* (VALVe, 1998), while the control group interacted with a computer program that required clicking on simple boxes. After ten minutes, each group was interrupted to complete an immersion questionnaire before returning to their tasks. After an additional ten minutes, each group was re-administered the original puzzle, and the completion time was recorded and compared to the original completion time. The researchers found that the questionnaire rated the computer game as significantly more immersive than the clicking task, providing at least nominal support for the development of an immersion score from an administered questionnaire. Also, the researchers found that the players of the computer game had a variable reduction in completion time for the puzzle task based upon level of immersion in the game, with players who were more immersed completing the external task more slowly than those with low immersion. This supports the hypothesis that more immersive activity can increase disconnection with the real world, or that there exists a transitional stage between immersion in a virtual environment and the return of full consciousness to the actual environment as demonstrated by the length of time required to return focus to the exterior world (Jennet et al, 2008).

This first experiment provides a basis for developing future measures of immersion, and lays the framework for a functional method of determining immersive levels. Providing a

concrete measure of immersive experience is a difficult process, but the outside-task reaction time test is a good initial attempt. While a valuable beginning to the practical measure of immersion, this work still only deals with the tell-tale attributes exhibited by immersed gamers—the symptoms of immersion, if you will—and does not completely explain what exactly immersion *is.* More research on the elements that encourage immersion, and how players interact with each element, is needed.

Gameplay Experience

Researchers Ermi and Mayra focus on individualized experience in their work on gameplay experience (2005). From analyzing transcripts of interviews with Finnish children about their personal experiences with media consumption, the authors discovered a pattern in reference to digital games. The authors distinguish between three types of immersion: sensory immersion, which relates to the quality of the audio and visual stimuli, creating a sense of presence; imaginative immersion, which relates to the story, characters, and game world; and challenge-based immersion, which relates to the mental and physical challenges based within a videogame. Whereas sensory immersion can be experienced during any multisensory stimulus (or, as the authors point out, a good screen saver), and imaginative immersion is best exemplified in the experience of reading a good novel, challenge-based immersion is unique to games. The interactive nature of videogames lends itself to creating a new type of experience, in which some players identify more strongly with the medium due to its ergodic nature. The authors emphasize, in the creation of their model, that immersion depends greatly on the connection between the individual and the game, as well as many other factors, such as player personality, context of gameplay, the specific motivation for a gameplay session, and other such situational factors

(2005). Their model was supported by further research, and is a good starting point for developing the discussion of immersion; however, as the authors point out, there are many factors not covered by this analysis, such as a broader variety of game types, that should be addressed in future research.

Another researcher also supports the individualized nature of videogame gameplay experiences; in an evaluation of Bartle's (1996) typology of game players, Yee (2006) surveyed over 3,000 players of online games to establish the factors that motivate game play. In his analysis, he discovered several factors of motivation separated into the categories of play for achievement, play for socialization, and play for immersion; however, he found that there is wide variation between players for various games, and while his article is short on analysis, it provides strong statistical support for the individualized relationship between games and their players (2006).

Breaking Immersion

Not surprisingly, designers also weigh in on the discussion of immersion. Immersion can increase enjoyment and time spent playing, both of which directly affect the commercial success of a game. Designer and columnist Ernest Adams describes three different types of immersion, and how designers break their own games by breaking immersion (2004). The first, Tactical Immersion, resembles flow in that it is a state of intense concentration, where the interface disappears and the player is caught in a flow state, facing immediate and solvable goals. The player, and the game controls, must respond rapidly and effortlessly in order to accomplish the fast-paced goals. The second kind is Strategic Immersion, which is slower than tactical immersion—whereas tactical immersion is physical and reactive, strategic immersion is the

engagement of the mind in tackling challenging and enjoyable puzzles or obstacles. Such immersion requires that player-implemented strategies actually work as intended; if a player's strategy fails because of poor planning, that player's immersion is not threatened, but if units are unresponsive or the gameplay relies upon pure luck too heavily, players will lack the necessary sense of agency to achieve Strategic Immersion. The final type, Narrative Immersion, is the development of a relationship between the player and the elements of the game's story: the characters, the plot, and the world. Excellence in storytelling can somewhat counterbalance faulty gameplay issues, as players immersed in the story will continue playing in order to continue the narrative, despite issues that might make the game unenjoyable in another context (Adams, 2004). While this typology of immersion is a useful reference for game designers, a more elaborate model is needed to understand the player's experience. The three categories provided by Adams are quite broad, and lack the necessary level of definition required to account for the complete nature of immersion. Although these delineations are sound, they require expansion and verification through testing and theory building to become truly valid in defining immersion.

Conclusion

Upon reviewing the literature developed around the experiential phenomenon of immersion, one quotation seems particularly appropriate:

> To each and every one of the above "explanations" it might well be objected: "So far so good, but what actually is the fun of playing? Why does the baby crow with pleasure? Why does the gambler lose himself in his passion? Why is a huge crowd roused to a frenzy by a football match?" This intensity of, and absorption in, play finds no explanation in biological analysis. Yet in this intensity, this absorption, this power of maddening, lies the very essence, the primordial quality of play. (Huizinga, 1971, pp. 2-3)

In order to discover this essence of play, and to develop an understanding of what immersion truly *is*, a new model is required. This model must be developed from analyzing the subjective experience of the game player himself, and must account for not merely one type of experience, but a range of experiences, fluidly shifting in intensity and type, to account for the broad sense of absorption that is common among many games of widely varied nature and the players of equal variety in personality and disposition. In the following chapter, I will present the Digital Game Experience Model, which will serve to satisfy each of these requirements.

Chapter 2

Calleja and Digital Games as Designed Experience[1]

The work of Gordon Calleja is a more fitting solution for the difficulties presented in studying the experience of immersion. In his Ph.D. dissertation, Calleja proposes a more comprehensive model of the immersive experience, replacing the tired and confused model of immersion with the model of incorporation. Developed from extensive interviews with dedicated players of two popular Massively Multiplayer Online Games (MMOGs), *World of Warcraft* and *Planetside*, the Digital Games Experience Model is composed of six separate components of immersion, on two separate levels of experience: within the immediate experience of game play, and within the wider context of interaction with games, including purchase decisions and forum participation. These components work in concert to incorporate the player into a seamless play experience, separate from the "Magic Circle" of Salen and Zimmerman (2003). The "Magic Circle" is a widely popular notion about the theoretical boundaries between play-spaces and "real"-spaces that describes the interaction of players with games, but focuses upon the immediate experience of game play without a clear discussion of the broader relationships that players have with their games. The DGEM takes into account six elements of gameplay but does not include the clear demarcation of play-space from the "real" world. For the purposes of this model, the entirety of the game experience is called into account—even those parts that are not directly related to a single play session, and do not involve a "lusory attitude," the particular mindset necessary to enter into a game (Suits, 1978). The DGEM attempts to cover both the

[1] The following section is based, almost entirely, upon Gordon Calleja's Ph.D. Dissertation, *Digital Games as Designed Experience*, in which he develops and supports his new model. All direct quotations will be cited, but the vast remainder is summary and explanation of the model that Calleja presents in his work.

decisions that lead to a digital game purchase as well as decisions like which block to lay next in *Tetris*, and everything in between; of a necessity, the magic circle cannot be held sacrosanct here, when the game itself is not the only relevant frame.

Calleja's interviews with players of MMOGs were analyzed for themes, and the elements that compose involvement for the players fit into six experiential categories, based upon the responses and experiences of those gamers: Narrative, Affective, Tactical, Performative, Spatial, and Shared Involvements. These categories are at once distinct from one another and yet also complementary; acknowledging videogames as a dynamic medium, these forms of engagement represent fundamentally different phenomena, and yet are inextricably linked within genres, individual games, and even the moment-to-moment experience of a single play session. Levels of each type of engagement shift fluidly, as do the types of engagement. A single play session may see a player climb to the top of a tower he spied in the distance (Spatial) to better utilize a long-range weapon against an enemy (Tactical) while his friends cover the lower reaches of a canyon (Shared Experience); as the enemy approaches, he uses his experience as a sniper and mastery of the game's controls to eliminate enemy targets (Performative), and afterwards basks in the glow of pride in a mission well accomplished (Affective) while watching a cut-scene that elaborates on the progression of the story (Narrative). These related dimensions are more theoretically flexible than the singular nature of previous conceptualizations of immersion, thus providing a solid basis for the analysis of gameplay and player experience, which was somewhat lacking in previous research.

The Digital Game Experience Model

The model itself is divided into the six distinct categories described above, with two temporal phases for each of the six types of involvement, Macro- and Micro-Involvement. The Macro-Involvement phase is concerned with the timeless question: Why do people play games? Each of the six aspects of involvement lends possible motivations to a gamer to play digital games; the simple answer of "fun" has been strongly questioned (Bartle, 1996; Taylor, 2006; Yee, 2006; Malaby, 2007) and other motivators must be found. The Micro-Involvement phase, then, deals with the moment-to-moment performance of game play in all of its immediacy. The examples of the six involvement measures in the fictional play session above are all reflective of the Micro-Involvement phase, during which the player begins to develop mastery over the game world and exerts agency within it with little conscious thought to the manner of the exertion. The final level, Incorporation, is developed from the internalization of each of the six frames, and allows the player to attain a deeper level of interconnection with the different elements of the game. Each of these elements was observed from Calleja's original interview and research data, and their validation (or failure of such) is the primary goal of the current research.

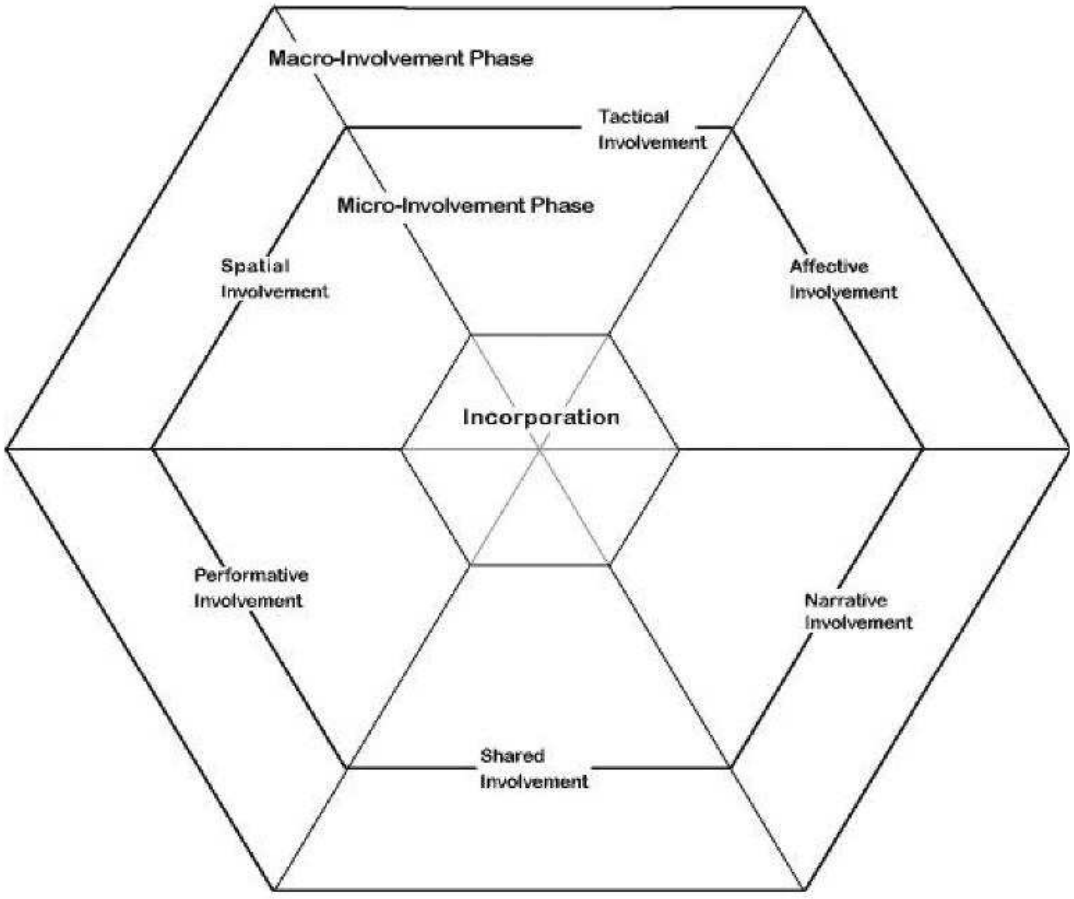

Figure 1: Digital Game Experience Model (Calleja, 2007)

Macro-Involvement

If the Magic Circle no longer provides a clear delineation of what is and what is not part of the digital game experience when applied to practical measures, and "fun" is no longer an adequate answer to the question "why", then we must look at the broader context of digital game play to discuss and evaluate motivations and drives to play. The experiences that guide purchase and play decisions are related to, but distinct from, the immediate moment of gameplay and the immersion in each play session. Here, I will explain and expand upon the six key factors that

Calleja believes are the strongest influences for many of the underlying motivations behind the decision to play digital games in the Macro-level of involvement.

Affective Involvement

Amongst a long list of creative media that have been developed throughout the ages, videogames may be considered unique in the level of participation that they allow their players. This ergodicity (Aarseth, 1997) is a quality that appeals to players, as a wide range of experience is available to match their mood, personality, and disposition. The combination of thought, emotion, and interaction is a powerful tool for eliciting strong emotional and mood responses from players (Bryant & Davies, 2006; Grodal, 2005, as cited in Calleja, 2007). As such, players are drawn to games which provide them the experiences that match the needs of their personal situations; anger and frustration can be vented in a First-Person Shooter (FPS), stress and anxiety can be relieved by a soothing puzzle game, and the boring, day-to-day life of an office clerk can be transformed into an epic quest through fantastic alternate realities. Unlike other creative media, videogames not only contain the essence of emotion within narrative structure, but also through the performance of game play itself; this allows gamers to choose the exact experience that they desire from their games, and game designers are not loathe to cater to these needs. Pacing, music, and graphics allow designers to construct elaborate emotional messages, while at the same time adjustments to difficulty level, speed, volume, and video elements allow the player to enhance or reduce the amount of stimulation to the exact level that suits his or her needs. These needs may shift, monthly, daily, or hourly; Calleja references one interview participant who created multiple accounts for the *World of Warcraft* that are each suited for distinctly different playstyles, allowing the player to choose a method of interacting with the game that

matches his needs at the time. These needs and gratifications are often labeled escapist, most often with a negative connotation. Escapism is a term, much like immersion, that has multiple uses and an unclear definition, though it is considered a generally negative avoidance of dealing with real-world issues (Evans, 2001). However, utilizing virtual entertainment to entertain and distract the consumer from the harsh realities of the daily world is no different from the Coliseum of Rome, the Theaters of London, or the romantic comedies of NBC. Many authors write about the possibilities for escapism as a positive and healthy experience, if not improperly or over-utilized (Evans, 2001; Tuan, 1998; Tolkien, 1983).

A quotation from Tolkien summarizes the key difference between the vastly different experiences referenced in the rebuke of the critic versus the enjoyable experience of the player:

> Why would a man be scorned, if, finding himself in prison, he tried to get out and go home? Or if, when he cannot do so, he thinks and talks about other topics than jailers and prison-walls? The world outside has not become less real because the prisoner cannot see it. In using Escape in this way the critics have chosen the wrong word, and, what is more, they are confusing not always by sincere error, the Escape of the Prisoner with the Flight of the Deserter. (Tolkien, 1983, p.148)

Spatial Involvement

The development of a fully-formed game world is one of the best facilitators of achieving the escapism referenced above. Travel and exploration are persistent themes throughout the entirety of human history; an elaborate virtual world can satisfy a player's wanderlust at a fraction of the cost of a real journey, and in the case of many Massively Multiplayer Online Games (MMOGs), can provide an incredibly diverse assortment of activities, ranging from the practical completion of tasks for story progression to the unstructured enjoyment of personal exploration of the landscape. Some players of these games refer to such experiences as "tourist moments," moments of wonder and admiration at the discovery of a particularly appealing

location or other unexpected discovery. Cubicle-caged urbanites can travel to vast forests, mountains, and plains to explore untouched wilderness, while rural villagers can travel to the most densely populated cities of today or antiquity. This quality of transportation provides strong motivation for playing digital games.

Narrative Involvement

Narrative involvement is less straightforward than one might imagine. While it does encompass players who play games because they enjoy and interact with the designed narrative, it also includes the personal narratives of the players themselves. Designed narratives are the stories provided by the game designer: the background of the world in which you are playing, character dialogue, cut scenes, and other methods of story progression. These narratives can be extremely compelling, especially for the Role-Playing Game (RPG) genre, in which games focus strongly around their central storylines. Personal narratives, however, are the stories that the players themselves develop from their experiences with the game. Comic mishaps, epic victories, personal challenges, the coming together of impossible odds to overcome a seemingly insurmountable obstacle—all are plentiful source material for the stories that gamers tell one another. Most gamers relate to their games in a personal way; even if they do not identify with their provided protagonist or storyline, they can unfailingly produce at least one story about each game they have played. For an example from my own personal experience, my dorm mates and I played large matches of *HALO: Combat Evolved* my freshman year of college; on the surface, it would seem that 16 people shooting at each other in a valley or on a space station would hold very little narrative. Quite the opposite was true, though; after every single game we played there was an informal break that included congratulations for tactics well-executed, recriminations for

tactics the other team thought were unfair (often, the two referred to the same tactics, and the utterances just differed by who won and who lost), and a general re-playing of the game in dialogue form. Truly outstanding performances, equally spectacular failures, and even deviant play-styles survived the night to be retold to others in days and weeks to come. I can still relate my most impressive feat in a game of *HALO* from a match that happened over six years ago. Such personal narratives are no less powerful or impactful than those written into the story by the game designers, and they greatly enrich the game experience for the players.

Tactical Involvement

In the Macro-Involvement phase, tactical involvement is expressed as the pursuit and fulfillment of goals, and the sense of accomplishment and satisfaction that accompanies those successes. Goals can be predetermined by the designers, as in the completion of a quest, the attainment of a new level, or reaching a high score; they can also be self-determined by the player, as in speed-runs (the completion of a long game in as short a time as possible), low-level challenges (refusing to strengthen the characters in a game beyond the initial level), or even setting temporary or nightly goals ("I'll log off after I finish this level"). A recently popular development that bridges the gap between these two types of goals is the addition of achievements, available for every game on the Xbox 360, and on some games for other systems. Achievements are goals provided by the game, and as such are predetermined, yet for most games these achievements do not align with the explicit goals of the storyline but provide interesting and creative challenges for the player, closely resembling player-developed goals. They also provide something referred to as "gamerscore," which is a persistent measure that only reflects the number of achievements a player has completed, as a reward for goal completion.

Online games provide a unique structure for developing goals, since many of the larger MMOGs encourage (and even require) group work and collaboration. The opportunity arises for groups to determine their own online goals, whether the completion of in-game quests and activities or the harassment and annoyance of other players (called "griefing," this is a common practice in videogames; it is an example of deviant tactical involvement and is also a good example of both tactical involvement and performative involvement as described below). Goal completion is in and of itself a rewarding past-time. In the real world, meaningful feedback and distinct cause-and-effect rewards for behavior and effort are rare, but in a digital game even small incremental increases are rewarded with a higher level, slightly increased abilities, or new treasures or equipment. Completion of these goals, smaller than or beyond the scope of simply completing the game, becomes an autotelic activity, meaning the player derives pleasure from the activity itself instead of viewing it as merely instrumental to completing a larger goal.

Performative Involvement

Tactical involvement is highly related to the completion of goals; in order to complete goals, the player must be able to exert agency within the game world, and agency is closely related to performative involvement. Agency is here considered to be the power to act within the game world; such actions need not be intentional, but the player must be able to intentionally interact with the game world and through these interactions produce meaningful consequences. In addition to the ability to act, the player must also have the ability to fail; dubbed "performative contingency" by Malaby (2007), this level of unpredictability is the core of many game experiences, from athletic contests to First-Person Shooters to casino gambling. Players spend hours increasing the abilities of their characters, thus reducing the risk of failure and increasing

the ability to exert agency, not only increasing satisfaction by heightened performance within the game, but also improving the players' personal senses of achievement. In games where player development through statistics is rewarded, players devote time and energy to increasing character stats and acquiring the best equipment. In games where personal performance and mastery of the games' controls and tactics are more highly rewarded than length of time spent acquiring items, players will direct their efforts toward increasing personal ability. In both cases, these two types of performative involvement are heightened and emphasized by the introduction of human players in the game world, be they opponents, allies, or merely cohabitants.

Shared Involvement

The key element in nearly all games, both before and after the advent of digital gaming, is the multiplayer experience. Ranging from all professional sports, historical and current, to a comprehensive list of children's games, to high-stakes Texas Hold'em in a casino, games are viewed as social activities, whether the players are cooperating, competing, or merely observing one another. Shared involvement stems from the allure of interpersonal interaction; all games, regardless of their nature, allow for spectators to share in the moment, if not in the exact play experience. Many members of the Nintendo generation can remember quite well watching a friend or sibling play a level in an 8-bit game, biding time until it was his or her turn to play. I can personally vouch for the powerful nature of shared involvement as a motivator within the broader context of life—I have made purchase decisions for games based upon their ability to include others, and I have organized or participated in at least a dozen large-scale gaming sessions, including tournaments, exhibitions, and simple free-play fun amongst groups of friends. However, with the advances in game technology in the last decade, sharing game experiences

has become both simpler and more appealing, producing a vast array of potential multiplayer game experiences. Both arcades and LAN centers, businesses that run interconnected computers solely for the purpose of gaming, have historically provided popular public spaces for the performance of videogame play in a social setting. In such places, crowds often gather to watch a particularly skilled performance, and players battle for supremacy in tournaments while cheers, groans, and a litany of creative taunts and trash-talk are shared between players and spectators.

With modern technology, these same experiences can be duplicated easily and efficiently from the home on personal computers and consoles, and contrary to the critical perspective that gamers "need to get out and socialize more often," such games provide an interconnected experience of gameplay, personal communication, and socialization with individuals who share at least one set of similar digital interests. Games now come with video replay features, allowing gamers not only to create their own personal narratives, but also to illustrate them with in-game footage of the event; the most popular of these replays garner hundreds of thousands of views on online video sites. Beyond even this measure of interpersonal connection lies the mother of digital social experiences: the Massively Multiplayer Online Game. MMOGs, such as the wildly popular *World of Warcraft* which boasts more than ten million players, are massive social environments; alliances rise and fall, friendships are made and broken, and marriages are dissolved or entered into by the millions of real people who inhabit these digital territories. I intentionally did not specify that these activities happen in the game; real marriages have resulted from the playing of *World of Warcraft*, as well as real divorces, and real friendships between players have developed, and virtual betrayals have led to real fights and real heartbreak, all related to the virtual world but with ramifications to the "real" world. I must stress that the social activities afforded by the nature of these virtual environments are not separable into categories of

game world and real world. As Calleja relates, one of his respondents moved across the United States to move in with friends he met in an online game (2007), and I personally have the experience of making friends with people I have never met in person, as well as witnessing two fellow alliance members start, develop, and maintain a romantic relationship without ever meeting in person. Calleja's interview data supports the strong connection between shared involvement and game play motivations, and with players readily supplying Blizzard over $150 million dollars each month, it would seem that the numbers support this conclusion as well.

Micro-Involvement

Despite the implicit or explicit motivations that guide game play in a broad sense, the actual moment of a play session presents a very different experiential phenomenon. Micro-Involvement is concerned with this immediacy of videogame play, which differs from other media in its ergodicity (the requirement of non-trivial effort to interact with the medium); the six components of the DGEM provide a more comprehensive basis for understanding the actual game play experience than do previous conceptualizations. The earlier conceptualizations tend to adapt theoretical models from other media to use in analyzing videogames, and also tend to fail, as no other medium possesses the level of user participation and ergodicity of the videogame.

Affective Involvement

There are several ways that game designers can alter the emotional state of the player. From creating a spooky ambiance using dim lights, dark colors, and discordant music, to creating a sense of panic and urgency as enemy gunfire methodically destroys the box the player is using as cover, designers have invented many tricks for creating an emotionally-charged player

experience. Landscapes featuring soothing color palettes, extraordinarily detailed panoramic scenic vistas, and pleasant music can instill a sense of natural awe and wonder in the mind of the MMOG player, and designers know that such detailed attention to the game world's environment can increase enjoyment of their games (and retention of their paying customers). Through the skillful use and manipulation of graphics, sound, and gameplay, designers can couple the intense emotional investment of a fast-paced, heavy combat scenario with lighting and sound tricks from the horror film industry, re-purposing the players' arousal from the combat into an increased susceptibility to the production of fear, and if perfectly executed can terrify an unsuspecting player (I know that I have personally shouted in alarm when such instances arise in my own personal game play experiences, but I have rarely, if ever, been so startled by a film).

Spatial Involvement

The internalization of maps and game worlds is the essence of spatial involvement. In action games like First-Person Shooters, the same levels, or maps, are played repeatedly against different opponents; a strong internalized knowledge of the maps assists players in making tactical decisions, ranging from knowing the best places to set up as a sniper, spots to expect an ambush from the other team, and the most efficient routes to travel to strategic points on the game map. As an example of this internalization, Calleja recounts a game session where, blinded by a flash grenade, he was able to move his avatar to safety almost instinctively by his familiarity with the game space. Other game types, like RPGs and MMOGs, have larger worlds and areas of responsibility for the player to learn; here, a player may not develop the detailed and nuanced picture of the world as in an FPS, but they have more areas that they can explore, and will internalize directions and key locations on the game map. Several gamers note that, for them,

exploration and discovery are two of the most appealing aspects of MMOGs, and the ability to travel to distant mountains and towers and actually explore those same areas is a powerful reinforcement for the exertion of agency, and increased involvement in the game. Without much, if any, conscious effort, players memorize the layouts of key areas of these games, and this internalization is a key element of feeling comfortable and confident in the game space, as well as providing its own sense of autotelic satisfaction for players who enjoy exploration and travel.

Narrative Involvement

Nearly all games present a designed narrative of some sort. In games such as *Phoenix Wright* (2005), players must engage heavily with the narrative of the game in order to further the plot; in games like *Tetris* and *DOOM*, the plot is unnecessary for game progression. Most games provide some level of interaction with a designed narrative, along a continuum between the two extremes listed above; RPGs have a higher focus on plot development and storylines, whereas FPS and Racing games tend to eschew strong plotlines in favor of action and excitement. MMOGs tend to have elaborate backstories, mythologies, and plotlines; however, many players ignore these designed narrative elements in favor of expediting game play. Calleja cites the majority of his participants as indicating that they actively ignore quest dialogue (the narrative explanation for why the player must go to place A and conduct task B in order to achieve some reward) and the provided world history in favor of moving on to more enjoyable game elements. However, lack of engagement with the designed narrative does not indicate a lack of engagement with personal narrative. Many players relish the experience of creating their own missions, whether to accomplish the prescribed goals of the game or simply to enjoy group activity within the game world; such an exertion of agency increases satisfaction with play, and provides

memorable personal narratives that can be recalled and shared within the game community. Many stories travel through the game world, ranging from comic misfortunes and narrow victories in epic boss battles, to the impressive tale of the large-scale, year-long infiltration and subsequent destruction of one of the most powerful player groups by a mercenary faction in *EVE Online* (CCP Games, 2003); this meticulously planned and superbly executed in-game heist cost the victims the equivalent of over $16,000 US in equipment and resources (Francis, 2008), and has been told and retold countless times across the internet. The intersections of these designed and personal narratives are the core element in the production of meaning in digital worlds, and are a key element in understanding MMOG play experiences.

Tactical Involvement

In the early history of videogames, decision-making opportunities for players were fairly limited; in *Pong* (1972), the player chooses where to position the paddle; in *Pacman* (1980), the player chooses which route to take across the board; and in *Tetris* (1985), the player chooses where to place the blocks and how to turn them. As games progress into the 21st century, tactical decisions in games have become far more intricate and complicated. Even FPS games can require a high degree of forethought and consideration, ranging from which equipment to choose, which path to take or where to go within the level, what role the player will assume (sniper, medic, assault, etc), and more, depending upon the game; all of these considerations must then be rapidly reappraised and perhaps revised, depending on the tactics of the opposing team, who may then shift tactics to match the player, who must then reevaluate, and so on, ad nauseum. In RPGs, and especially in MMOGs, these decisions become more intricate by an order of magnitude; with complex game worlds that sprawl across a vast digital area, and

hundreds of quests and thousands of potential enemy encounters, as well as thousands of possible combinations of equipment, skills, character classes, and millions of potential companions, tactical considerations are not defined simply by the rules of the game any longer. Players must use internalized knowledge of the game world, the interactions and predicted behaviors of human players within the game, along with a working knowledge of a vast array of weapons, armor, spells, potions, and treasure (along with the locations where such items can be found), in order to determine what to do next within the game world. The amount of information that must be processed to make tactical decisions with MMOGs like *World of Warcraft* is stunningly immense, and yet players become so intricately familiar with these elements that they can make such decisions almost automatically; if there is a piece of information that they are lacking, then there are surely other players who know or internet resources to fill the gap in knowledge. Guilds, alliances, and clans are good exemplars of both shared involvement, detailed below, and tactical involvement at both the Macro- and Micro-Involvement levels. Many such player organizations are structured with the most experienced players in leadership positions, and various members take specialized roles during the completion of games. In MMOGs, epic boss battles often require advanced strategies and a wide array of player abilities, including fighters, healers, long range damage dealers, magic users, and other various player types in order to succeed; which players take which roles is not always determined by player preference, but by the tactical needs of the group as a whole, and these considerations must be taken into account before ever attempting to defeat said bosses. In FPS games, player alliances can also designate roles based upon the skills of the team members and tactics developed between the players; an especially steady hand may be used as a sniper, while the quicker members of the group may be used to lure approaching enemies into the path of the sniper's fire, and with the popularization of

headsets and voice chat, such tactics can be altered within moments if the need arises. This level of coordination is especially common in competitive and tournament-focused player groups, who can often earn acclaim and not-insignificant monetary prizes for utilizing such intense tactical considerations in tournament play. Players must consider these tactics outside of the actual moment of gameplay (Macro-Involvement), but must also be able to develop new tactics and use their own knowledge of the game world to make informed decisions when emergent and/or unexpected situations arise (Micro-Involvement).

Performative Involvement

The ability to exert agency was the primary focus of performative involvement in the Macro-Involvement phase, and that fact remains the same for this level as well; however, the focus has shifted to *how* players exert agency through game controls and movement. Also, in considering the method of exerting agency, there is a distinction between "pieces" and "avatars." In some games, multiple game units, or pieces, may be manipulated, but do not directly represent the player, like multiple military units in Real-Time Strategy (RTS) games or the descending blocks of *Tetris*. Avatars, on the other hand, are singular entities to which the player is anchored; the player may control more than one avatar throughout the course of a game, but each time the player is anchored to only one avatar at a time, providing the player a digital representative in the virtual world.

Games that utilize pieces generally require a wider focus on the game world; RTS games require players to micromanage harvesting, refining, and distributing resources; develop, upgrade, and maintain offensive and defensive units; and control these units in battle. Even *Tetris* requires a tactical evaluation of the most advantageous block placement within the game

space before the player uses the controls to rotate and drop the pieces. Games with pieces tend to require a broad style of control, and especially for RTS games, mastery of controlling multiple units at once is a great portion of the challenge of the game.

Games with avatars have a more immediate style of control. The translation of a button press, mouse click, or wave of the Wii controller into motion of the character is one of the most necessary elements for the development of feelings of agency in the game world, and this connection between the player and avatar serves to further anchor the player in the game world and increase identification with the avatar, be it a human, alien, fighter jet, or an abstract blob. The first-person perspective, where the player sees at most the hands and feet of the avatar, provides an even deeper connection to the action within the digital world. This connection to movement can be pleasurable in and of itself, and in all cases is a necessary component of game enjoyment; one of the largest sources of frustration in digital games stems from difficulty with controls, which limits or eliminates the player's ability to exert agency within the game world.

Shared Involvement

The social aspect of digital worlds can be present in all games. Single player games allow for groups of players taking turns, or spectators to serve as an audience for a play session; however, multiplayer games are the true locus of shared involvement. Populating a digital world with human players who interact with one another adds depth to a game that is almost impossible to provide through scripted Artificial Intelligence (AI). This social element adds another anchor to the game space; for many games, there is no separation between the player and the avatar. The actions of a player's avatar are attributed to the player, and attacks on the avatar are attributed as attacks against the self; if I were to be killed repeatedly by the same teammate, I would be

personally offended, as well as aggravated and frustrated. As in the real world, a system for maintaining normative behaviors is either designed from without or produced informally from within; administrators boot or ban players that kill teammates or cheat the game, while player organizations and alliances keep "kill on sight" lists of individuals who violate informal norms, such as the intimidation of weaker characters or theft of in-game items. Collaboration is also a major thematic element in nearly all MMOGs, as the end-game content cannot be overcome by any one character (or by any five characters combined, for that matter), forcing the development of at least temporary player associations and loose alliances to further a common goal. Human opponents, as well, provide an element of unpredictability to every game session, as skill levels, equipment, and tactics of each enemy character will vary with every single match; also, as one of Calleja's participants so insightfully pointed out, there is an additional level of satisfaction that comes from besting human opponents in the game. Online videogames and MMOGs are especially good at reproducing such social phenomena as competition, collaboration, and organization of social groups within digital worlds.

Incorporation

For videogame players, levels of engagement range along a spectrum; in the diagram referenced earlier, conscious attention to a particular type of involvement lies along the outer edge of Micro-Involvement, while internalized and an almost instinctive knowledge and assimilation of game elements lies closer to the center, approaching incorporation. In fast-paced FPS games, the experienced player does not consciously think "I'll press the W key to move forward, and then use D to sidestep right while rotating the mouse to acquire a target." The experienced player simply does it—he runs forward, sidesteps behind cover, and eliminates the

opposing team. Experience and involvement lead to internalized knowledge of game function, allowing highly complex combinations of actions and tactics to flow together seamlessly into a fluid motion that the player can perform without consciously appraising each action. The player incorporates knowledge of the game world, while at the same time he is incorporated into the game world itself via representation as an avatar, making the game world present to the player while presenting the player-as-avatar within the world. The player is now a part of the game's world; the most direct method of observing this happen is the shift in the use of pronouns. The incorporated player refers to player actions within the game in the first person; the avatar is now an extension of the player, not a puppet that the player controls.

Conclusion

Engagement with and internalization of the six elements of the Digital Game Experience Model produces incorporation; incorporation results from the synthesis of aesthetic affect (affective involvement), internalized tactics (tactical involvement), designed and personally created narrative (narrative involvement) communication and the presence of other agents (shared involvement) and movement (performative involvement) within a habitable domain (spatial involvement) (Calleja, 2007).

The internalization of game elements, and the effortlessness that develops within incorporation, are analogous to flow states observed by Csikszentmihalyi. However, flow refers to an activity, or the performance of an activity, that reduces every other consideration, leaving the performer in a state of heightened singularity of mind; this does not take into account the engagement with and presence within a digital world. While incorporation and flow both include a loss of awareness and conscious thought, incorporation requires the player to accept a spatial

relocation into a digital domain, where he can exert agency. To fully describe the experiential phenomenon of incorporation, it is necessary that consciousness, emotion, and environment all integrate into one seamless experience.

As Calleja states in his dissertation, the development of a new term for the phenomenon of presence/immersion/engagement/flow is not intended to create further terminological confusion or to introduce a new concept to the world of digital games; instead, this model of incorporation serves to clearly define the experience that was initially described by those terms, and to clarify what exactly is meant when discussing the different salient aspects of this experience.

With all of these elements considered, this then is the resulting definition of incorporation in digital games: *Incorporation is the subjective experience of inhabiting a virtual environment facilitated by the potential to act meaningfully within it while being present to others.*

Chapter 3

Research Questions and Methods

The review of the literature has shown that there is no single, unified theory of immersive experience in games. The academic literature reflects a disagreement on the fundamental nature of the immersive experience, or the elements that compose such experience. Calleja has created a new model for understanding the experience of immersion, and has developed the concept of incorporation to define the pinnacle of immersive experience. In order to evaluate the validity of Calleja's model, my own research will serve as a replication, with a new sample population to test generalizability. Therefore, there are two questions that will be asked during this research.

RQ1: Do the six themes of involvement provided by the Digital Game Experience Model adequately and comprehensively describe the elements that compose immersive experiences in videogames, especially at the Micro-Involvement and Incorporation stages of engagement?

RQ2: Is the description of incorporation as a six-sided experiential phenomenon, as presented in Calleja's work, an accurate representation of the videogame-related experience described more commonly as immersion?

Methods

The course of this research study is guided by a desire to conduct further exploration of the Digital Game Experience Model established by Calleja using different methods and a

different target population. Whereas Calleja conducted his interviews within a digital game world (in either *Planetside* or *World of Warcraft)*, the interviews I conducted took place in the physical world; this change removes players from the actual environment of the game itself, and the influence that being within the game space may exert upon interview responses. The samples for these interviews are designed to target gamers who prefer console games over Calleja's original sample of MMOG players. The change in sample population is both a necessity and a validation technique; for the former, significant expenditures of resources not available for this study are required to obtain enough familiarity and notoriety within an MMOG to be able to conduct valid research, and for the latter, this research tests the DGEM with console players and players from the Southeastern United States, thus expanding the generalizability of Calleja's findings if they should be confirmed.

Furthermore, this examination is more focused than Calleja's original study. The initial research was exploratory in nature and a general examination of the experience of immersion; the six themes of the DGEM arose from the analysis of a large amount of qualitative interview data. Here, the interviews are designed to focus upon the experience of immersion in games, but the analysis is based upon the model provided by Calleja; in essence, this research is designed to search for the themes developed by Calleja and either verify, modify, or reject the notions that Calleja sets forth in the DGEM.

Finally, qualitative methods were chosen over quantitative methods for a variety of reasons. The development of a survey or other large-scale data collection method would have provided impressive amounts of statistical data, but I did not choose that route for two main reasons. First, this theory is very young, with this study being only the first test of a model that could become quite useful if it proves to be valid; as such, qualitative methods are more valuable

in the development stage of theory building, and duplicating Calleja's own methods to a degree decreases the potential for validity errors unrelated to the accuracy of the model. Second, technical issues, such as the necessity of recruiting an adequate sample size, made designing a survey an inefficient use of resources, and furthermore, most importantly, I specifically wanted to design a very open-ended interview in order to catch the true nature of the opinions of the participants. Personal interviews provided the best opportunity to allow players to speak in their own terms about games and engagement, and allowed players to develop themes about engagement without any direct prompting from the researcher.

Initial Interviews[2]

The initial round of interviews was designed to briefly engage a moderate to high number of participants in a quick interview about games.

Sampling

The initial round of interviews took place at the Carolina Games Summit, a day-long event featuring food, music, console game tournaments, and free-play for a nominal entry fee. This venue was chosen specifically because of its location in Goldsboro, NC; a large proportion of participants at this event were not local residents, meaning that any sample drawn from this event is composed of individuals willing to travel at least a small distance and pay a small fee to participate in a videogame-oriented summit. Furthermore, not all of the residents are from a specific geographical area; though most of the participants were from the surrounding areas of the Southeastern United States, not all participants were residents of the same city or town, which provides a boost to the generalizability of the findings of these interviews. It can be

[2] Approved by University of Georgia Internal Review Board, Project Number 2009-10565-0.

assumed, then, that the proportion of participants at this event who are dedicated videogame players is rather high; dedicated game players are considered both more knowledgeable and more likely to have experienced immersion (if for no other reason than simply spending a greater amount of time playing videogames) than a non-gamer.

Initially, participants who were not actively engaged with the provided tournaments or free-play areas and were not engaged in other social activities were approached for the interviews; as the day progressed, fewer and fewer participants were socially isolated, and to compensate for the shrinking pool of possible candidates I began to interview small groups of players who were socializing with one another, but remained isolated from the larger crowds at the event; these tended to be teams of players waiting to participate in group-based competitive tournaments, thus accounting for their familiarity with one another and isolation from the population at large. 15 interviews with 27 total participants were conducted. Interviews were recorded, transcribed, and then coded for the presence of themes, with one code for each of the six aspects of Calleja's model and a code for "Does not fit" for any items that may lie outside the scope of the DGEM; the "Does not fit" items were then more thoroughly examined.

Interview Methodology

I wanted to ask players briefly about immersion, but did not want to prime players by asking questions about immersion directly. An alternative presents itself in the form of research by Ermi and Mayra, who found a strong correlation between a player's favorite game and high levels of self-reported immersion (2005). Therefore, during the interview I asked players to name their favorite videogame (herein assumed to be a high-immersive title, at least in the experience of the player naming it), and briefly describe what elements within that title contribute to its

status as the individual's preferred videogame. This tactic was adopted in order to elicit responses related to the elements that either develop immersion or are found within highly immersive videogames, without directly inquiring about the topic. Furthermore, participants were also asked to discuss their least favorite games, or elements that ruin the experience of playing a game; with this question I hoped to uncover more information about aspects of game design that failed to engage the player, or "broke" immersion for that respondent. The initial interviews included only those two questions, with a few simple follow-up questions; as the interviews progressed through the day, more thorough follow-up questions were included to stimulate the conversation about engaging elements within videogames, and the participants responded to this additional prompting with a rich variety of engagement data.

In-Depth Interviews

In response to the rich data provided by these later interviews an in-depth interview was constructed, and a second round of more thorough, in-depth interviews was conducted.

Sampling

While the first round of interviews was conducted using a diverse population at a geographically accessible location, the in-depth interviews were necessarily more limited in scope. A convenience sample was drawn from the clientele of a local independent videogame retailer, where research fliers were posted to gather initial respondents and word-of-mouth snowball samples provided several more research participants. Participants were screened for age and for experience with videogames. Twelve interviews were conducted with fourteen participants; nine interviews were conducted in person, three were conducted over America

OnLine Instant Messenger, one was conducted over Google Gmail chat, and one interview was conducted over the phone, and generally lasted between 10 and 20 minutes each. The responses were recorded, transcribed, and then coded in the same manner as the previous round of interviews.

Interview Methodology

These interviews followed the same general pattern as the initial round, with the researcher asking about favorite and least favorite elements in games. However, the follow-up questions about favorite titles were more thorough and expansive, with specific attention paid to any themes that emerged from the respondent's answers related to engagement. Participants were asked about immersive elements within their favorite games, and when participant responses were general or vague, follow up questions that specifically referenced the six types of engagement were used to more fully illustrate the immersive experience. The exact questions varied between interviews, but they focused on eliciting responses about what elements of their favorite games were most enjoyable, and thus prompting a discussion of the elements that promote immersion. Players were then additionally asked specifically about immersion in order to provide data about player opinion of immersion, and not just the interpretation of other answers by the researcher (interestingly, every participant was familiar with the concept of immersion; not one required an explanation and yet every person gave a unique answer)[3].

[3] The question "What makes your favorite game better than similar titles?" was asked during one of the later in-depth interviews; the responses given to this question were so rich and detailed that any future research would do well to include it from the beginning, as it forces players to focus on the areas that they truly engage with the most by comparing the favorite title to other games that fail to engage the player in a similar fashion.

Issues and Observations

As observed in Calleja's original examination, players are leery of discussing gameplay with researchers who are not themselves gamers; this is quite understandable when the only exposure to academic videogame research is the reporting of controversial studies about the connection between videogames and violent behavior. Like Calleja, I experienced explicit and implicit challenges from respondents, as I was asked about my personal gameplay preferences. A researcher who was less familiar with the world of videogame culture would have had difficulty courting these participants, and would have potentially suffered from the lack of specialized vocabulary necessary to fully understand the answers provided by the players.

Chapter 4

Exploratory Interviews

The first round of interviews was designed to ask dedicated videogame players to describe the elements within highly-immersive games that are most important to the development and experience of immersion in their own terms. The interviews initially consisted of only two main questions with follow-up items to clarify and expand upon these answers; as the interviews progressed, however, more extensive follow-up questions were included in order to more fully understand the players' perspectives. The interviews were then analyzed for themes related to immersion to discover if the responses given by the participants aligned with the categories provided by Calleja's DGEM. All six types of involvement received strong support as important elements in highly immersive game experiences.

Affective Involvement

Over a dozen players report significant emotional connections with their favorite games, either directly or indirectly (for example, through a discussion of the beauty of a game's graphics). The most common discussions of affective involvement as an element of immersion lie along four thematic lines: beautiful graphics, connection with the characters and story, frustration, and simple enjoyment.

Graphics

For several interviewees, a visually pleasing experience is a key element of each player's interaction with his or her favorite game. Eight respondents specifically identify graphics within a videogame when asked to describe elements that they most enjoy; for at least one participant, excellent graphics are an absolute necessity for engagement (Respondent E19), and for the others, good visual quality is one of several factors involved in their enjoyment of the game.

For some players, however, graphics play a less important role. Three respondents define gameplay as more important than graphics; one player specifically describes a title she dislikes by saying "[T]he graphics are awesome. Great, but that's it, they're good, I still don't like playing their game" (Respondent E22). Another player, quite succinctly, states "Game play is much more important than graphics" (Respondent E16). Outstanding graphics paired with a lackluster development of plot or gameplay, then, fails to produce immersive experiences.

A common theme in several interviews is the belief that designers "rush" game production to meet deadlines, and as such lose the attention to detail that is the hallmark of graphic excellence; the "blood splatter on the wall," as Respondents E22 and E23 describe it, is an example of small graphical details that players point out as important. In several interviews, newer games with stunning graphics and advanced technology were eschewed often in favor of naming older games with more interesting and enjoyable game play; players relate more fully with games that excel in other categories as well as being supplemented with superior graphics.

A visually appealing game experience, while important to several players, is not a requirement for game involvement, but instead serves as an excellent supplement to an already engaging game experience.

Connections with Characters and Story

Emotional connection with the designed narrative is important for participants as well. A handful of players emphasize the importance of the emotions elicited by the games they enjoy as an important part of their play experiences; two players briefly mention emotional investment, preferring a game "where I can care about what's happening" (Respondent E8). A third player delves more deeply into the issue, describing how *Chrono Trigger* (1995), his favorite title, "elicits all these emotions" and "[y]ou get so emotionally attached to these characters" that "you drop yourself into it" (Respondent E25). This participant actually describes involvement with the narrative and affective aspects of *Chrono Trigger* as the main elements which produce immersion within that game world[4].

Positive emotional experiences increase the value and enjoyment for the players; this emotional connection, whether it results from being intimidated by threatening music and scary moments or developing strong bonds from insightful character development, is important for incorporation and the ability of the player to truly feel as if he or she is inhabiting the game world.

Frustration

Not all affective connections are necessarily positive; several players express that one of the key emotions that ruins engagement with games is frustration. This frustration can stem from non-responsive controls, excessive difficulty levels, feeling that the developers did not dedicate sufficient time or effort to adequately complete their game, or experiencing simple boredom

[4] Here, it is important to note that many of the interviewees indicated that storyline and plot are very important elements of their favorite games; however, due to the exploratory nature and brief length of most of the interviews, in many cases the reasons for the connection with the storyline are left largely unexplored.

from watching excessively long cut-scenes. Several participants claimed that control problems were especially frustrating, and could have a strong negative impact on engagement; these problems are interconnected with a failure to experience performative involvement, and negative feelings of anger and frustration at the inability to exert agency can amplify the problematic nature of inadequate controls.

Beyond the control interface, negative gameplay experiences can also lead to frustration. Respondent E10 explicitly states that he enjoys playing games on the easiest difficulty setting, to allow for a more pleasant game experience; several respondents refer to the detrimental effects of games being either too hard and thus frustrating, or too easy and thus boring. An even greater number of participants discuss a disconnection between players and developers, citing frustration and feelings of disappointment when games fail to meet the promises of the developers. Discussing games that fail to meet expectations or which contain programming errors or "glitches" upon release, Respondent E11 relates "that's something that it just sort of cheapens the, you know, idea of going to this whatever other world you're going to and experiencing a new world and new culture. It just destroys that completely."

Finally, two respondents report that the excessive use of cut-scenes for narrative exposition can seriously damage the player's involvement with the game; players who engage more strongly with tactical and performative elements than with the narrative element may find it difficult to remain engaged with a game that takes control away from the player and prevents them from playing for a significant length of time.

Frustration is a commonly experienced emotion in videogame play. To successfully develop immersion and incorporation, sources of internal frustration, such as excessive difficulty

levels, must be limited, and sources of external frustration, such as unresponsive controls, unmet expectations, and poor game design, must be eliminated.

Fun

The most popular affective element, referenced directly by nine different respondents, is the simple enjoyment of a fun play experience. Playing games that match the user's preferences, reveling in the enjoyment of exploring and experimenting with activities that are impossible in the daily world, and relishing the decidedly pleasurable feeling when the player hears a thrown grenade detonate or the distinctive "*tink*" of a headshot (Respondent E25) are all autotelic rewards in and of themselves. The experience of "that undescribable [*sic*] feeling that makes you fuzzy inside" (Respondent E24), regardless of the source, is a powerful agent in the development of immersion.

Affective Conclusions

Players enjoy playing games, and games that minimize frustration and provide good visuals and controls can elicit positive feelings. Players gravitate towards games which suit their own needs as individuals, and while different styles of games provide distinctly different experiences, most games provide a measure of simple enjoyment in playing. These positive affective connections seem to be highly connected to play experiences with highly immersive games.

Spatial Involvement

The spatial category of the DGEM tends to be, like a game's controls, a background element. Several participants enjoy the freedom to roam large worlds that feel natural, and to feel as though they inhabit these worlds, but this may not be in the forefront of their idea of an enjoyable play experience. Nevertheless, several respondents specifically reference their interactions with the game world as important aspects of their favorite games.

Exploration and Interaction

Interacting with the designed game world can be an interesting and rewarding activity by itself, according to some of the interview participants:

> **Interviewer:** [W]hat is it about *Oblivion* that really gets you?
> **Respondent E3:** Uh, the dungeon exploration. Run around, dungeon trolling, and…
> **Interviewer:** Nice. So is it like picking up the items, or is it …
> **Respondent E3:** Exploring, mostly. Like, picking a direction and you can just go that way and see something interesting and then go off somewhere

Two other participants discuss exploring levels in their favorite FPS game, in order to find new sniping spots or other advantageous positions for multiplayer play. While not as expansive an exploration as the previous example, these players are also engaging with the game space in order to explore the environment more fully.

For players like this, spatial involvement centers around the freedom to interact with an environment that is large enough to support exploration, while at the same time providing tangible feedback for the player's actions in that world. The ability to pick a far-off landmark and travel to it is limited in daily life, so this kind of exploration may bring a sense of excitement

and adventure to a player who rarely engages in real-world activities that are exciting or adventurous, and exploring a more limited multiplayer arena may yield tactical benefits during competitive play.

Teleportation

For some respondents, however, spatial involvement revolves around feelings of presence within the game world, a feeling of actual inhabitation by the player in the digital environment. Three players describe the same experience; "it feels like you're in the game," relates Respondent E2; for Respondent E4, "I was able to lose myself in the world, really feel like I was somewhere else," and Respondent E21 prefers any game that can "suck me away from reality." For these players, they feel an actual sense of presence within the game world; as inhabitants, they are more highly engaged than simple players, who are merely visitors in the game world. In this case, incorporation depends heavily on the player's ability to feel as though he is actually physically or at least metaphysically present within the game world.

Spatial Conclusions

Even if spatial considerations are not foremost in the mind of the player, several participants expressed quite clearly that interaction with and inhabitation of the game world is a very important aspect of engagement with the videogame environment in their favorite titles. In fact, inhabitation is one of the key elements of Calleja's definition of incorporation; these participants have confirmed the presence and importance of spatial involvement in highly immersive games.

Narrative Involvement

As in Calleja's original work, players discuss both their need to engage with the designed narratives of their games and to develop their own personal narratives in solitary and competitive/cooperative multiplayer games.

Designed Narrative

Several players explicitly identify engagement with the storyline as being a prerequisite for immersive gameplay experiences; for these players, videogames serve as a form of interactive storytelling, and the quality of their experience depends directly on the quality of the designed narrative. Six participants identify engagement with the designed narrative as the single most significant aspect of games that they consider highly immersive. Four players briefly mentioned the storyline elements, but two players went into further detail; for Respondent E26, his favorite title allows him to interact with the designed narrative by impacting the central storyline, and for Respondent E25, he engages with the narrative most strongly when it is co-developed with a powerful emotional attachment to the storyline and characters as well. These two players value the storyline most highly, but the involvement and engagement with the narrative is intensified by the presence of other types of involvement, performative for the first and affective for the second, respectively; the combination of involvement types is indicative of Calleja's notion of incorporation, and is supported here by the strong immersion the players feel during play of games featuring this blending.

For all six of these players, engagement with the designed narrative allows them to enter into the game world more completely; identifying with the story and the characters adds to the enjoyment of the experience, as well as increasing the feelings of incorporation with the game

world. For some, engagement with the narrative is strengthened by the addition of other types of involvement with the game experience.

Personal Narrative

While a few participants make some references to the importance of personal narratives in games, one respondent expands upon the exact nature of his personalized experience with games:

> **Respondent** E**9:** One more thing that I think I could add to that is, uh, the saying "Truth is stranger than fiction" uh, applies to you know stuff that actually happens that is that you just could not have thought on your own and you know. I think that is, I think that really applies to my best experiences with video games in general. Like, if we were playing *[Super] Smash Brothers [Brawl]* (2008), we would be playing and something random would happen in the game that simply could never happen ever again, or had never happened before. And it was the result of a bunch of random coincidences that came together with the players playing, with the game engine doing something random, uh, whatever, whatever happened, it ended up supplying us with a lot of good laughs or something like that. There's other occasions, like in *Shadow of the Colossus*, the PS2 game, there was, uh, there was a couple of occasions where I made some really reckless jumps off of a cliff in order to land on my target and slay it. And, uh, I mean, I'm not going to say I was very skillful at the game but I'm gonna say that I got lucky on these few occasions where I jumped off a cliff and right on the character, the uh the enemies head sorta slaying him you know. Stuff like that. It worked for me then. Some games would never have even supported such an experience, though and I what I really like is that the fact that, uh, because the game is flexible in its design, um, I was able to get my own sort of experience out of it and that allowed me to have a lot of fun.

In the interview above, Respondent E9 describes unforeseen combinations of game conditions that provide unique and memorable digital game experiences. Here, comedic mishaps in a fighting game provide enjoyment for multiple players and unlikely and/or epic successes in an adventure game provide truly exciting and memorable events that are unique to the player.

Though thousands of players may play through the same videogame, it is possible that no other player will ever experience the same events, and this uniqueness personalizes the game experience. These personal connections with the game provide a deeper relationship and sense of engagement with the digital world, and lead toward a heightened sense of incorporation.

Narrative Conclusions

Whether through engagement with the designed narrative or in the development of personalized narratives, many players relate to the stories inherent in the experience of playing games. These stories allow players to connect more deeply with the game world, and narrative involvement is greatly amplified when designed narratives are coupled with emotional connections, or personalized narratives are shared with friends; for these players, narrative involvement is crucial to the development of immersion.

Tactical Involvement

Tactical involvement encompasses a great deal of game play; participants in these initial interviews frequently discuss the importance of various gameplay elements to their personal level of engagement with their favorite games. The common themes that emerge from these discussions are appropriate difficulty level, the presence of human opponents, the ability to choose multiple character options, the inclusion of achievements, and requiring players to “think outside the box” to accomplish goals.

Difficulty Level

Several players report higher levels of engagement through matching the level of difficulty in the game with the player's desired level of stimulation. Three players engage more strongly with games that challenge them up to and beyond the level of their abilities, whereas another player prefers to play easier games because "I like the experience, I don't want to have a heart attack you know, while I'm doing it" (Respondent E10). Respondent E15 describes finding equilibrium between the two; "if it's too hard, and too hard to learn you don't want to play it," he describes, but "if it's too easy then it's not worth playing. So you have to get that right level of difficulty."

These responses about difficulty levels and learning curves closely match the principles of Csikzhentmihalyi's model of flow and the optimum experience; if the level of difficulty of a task is extremely close to, but not beyond, a player's ability, then the accomplishment of that task is a highly gratifying experience, and will increase the player's engagement with the game drastically. Whether by setting the difficulty level in a game menu or choosing a game based on its inherent ease of play, players have options available to tailor their individual play experiences to meet their needs.

Human Opponents

The addition of human opponents into a digital environment exponentially increases the variability of the play session and increases engagement for some players. At least five participants listed the tactical elements associated with competition against human opponents when discussing highly immersive games. Respondent E19 briefly describes specifically enjoying the strategies necessary to overcome human players; the other four of these players

(Respondents E22, E23, E24, E25) are members of a competitive team in *Call of Duty 4: Modern Warfare*, and they discuss not only the enjoyment they derive from overcoming opposing players, but also describe their frequent practice sessions, and the necessity of constantly developing new tactics. For these players, devising and executing new tactics increases their involvement with the game, and constantly learning and updating their tactical abilities is an important aspect of their engagement with tactical involvement within the game.

Multiple Character Options

Character and skill-set customization are also important tactical considerations for the interviewees. Two participants engage strongly with customization. For Respondent E14, fighting games were highly appealing tactically because "you get to pick from so many different characters, so many different fighting stances, […] so many different strategies;" these elements greatly increase the replay value of the game, as the player is able to explore the tactical abilities of each character. Similarly for Respondent E16, RPGs that allow skill customization hold a high replay value as well; "I've played through *Diablo 2* hundreds of times and it was different for me every time."

For these players, the wide variety of strategies available by choosing different characters or different combinations of skills and abilities increases the value of the play experience; choosing a new skill set essentially doubles the length of a game, allowing a unique and interesting replay of the game. Multiple skill combinations increase engagement further, and developing and mastering new and unique skills and abilities to overcome game challenges in different ways increases tactical involvement for these players.

Achievements

Similarly, achievements also serve to extend the functional life of a videogame experience by introducing additional goals to accomplish within the game. Respondent E27 notes that achievements increase the lifespan of a game by maintaining his interest in a title longer, as well as adding replay value. This same logic applies to the unlocking of secret areas or additional characters in games; for another two participants, adding new content to subsequent play-throughs and the addition of extra challenges for the players to uncover and conquer increase their engagement with games. The inclusion of goals beyond those related to the completion of the main storyline is a strong influence on the sense of engagement that these three players report in highly immersive games.

Thinking Outside the Box

Harder puzzles, non-repetitive game play, and interesting and unique game mechanics are elements that several players discussed as important for their tactical enjoyment. Three participants stressed the importance of fresh challenges to maintain interest in the game, and to avoid boring the player through needless repetition. Respondent E8 lauded *Portal*, a unique first-person puzzle game, for its simple and unique mechanics:

> **Respondent E8**: Making me think laterally about what I'm doing, uh… A really good example of this would be the game *Portal*. Uh, it's a great game; you just get in there you have to think about all kinds of different ways to do one thing. Uh, you're given a real simple idea of how to do what you've got, you're supposed to do but you're given so many ways to execute it and actually go about it, um, so, yeah I think, I think that's really important to me.

The development of new and different techniques to overcome game obstacles prevents game experiences from stagnating, becoming boring, and ruining the engagement the player might otherwise have experienced.

Tactical Conclusions

Several participants describe the importance of a wide variety of tactical elements as a necessary aspect of their favorite games; a strong relationship is present here between interesting and challenging gameplay and highly immersive games. These observations fall directly in line with those in Calleja's original model.

Performative Involvement

When asked about the elements that compose their favorite game experiences, respondents discuss five different themes related to the exertion of agency within a game world: game design faults, mastery of game controls, ability to meaningfully impact the game world, freedom to choose how to impact the game world, and instant gratification.

Effective Game Design and Controls

By far the most common commentary about exerting agency in videogames revolves around the implementation and design of the game and the control interface. Five different respondents directly identify defective controls and malfunctions in the game's programming and design as the leading causes of dissatisfaction with a game experience. "Cheap" strategies (those that take advantage of flaws within the game's design), "sticky" controls (controls which either fail to respond immediately to player input, or which do so unreliably), and other

"awkward" elements within a game are a serious detriment to the player's level of involvement with the game.

When players are aware of the control and design elements, incorporation becomes difficult; when players are frustrated by these elements and unable to interact with the game effectively, incorporation becomes impossible. The first interaction that players have with digital games are through the controls—before any storyline can develop, before any game mechanics can be demonstrated, the player must be able to utilize the control interface to interact with the game design. The best control interfaces and design schemes are those that are never noticed after the initial learning period. Participants noted that poor controls and broken design elements are two of the best ways to ruin their enjoyment of a game, creating "awkward" play experiences. The top priority for creating a game with high performative involvement, then, is the optimization of the input mechanisms that will allow players to learn the system for control and interaction, and then allows them to forget the system exists in order to more fully enjoy the game mechanics, sensory presentation, and narrative.

Mastery of Game Controls

In contrast, when controls are well-implemented and the player overcomes the initial learning stages of game interaction, obtaining mastery over the game's controls can become an autotelic experience, instead of simply expediting the accomplishment of game goals:

> **Interviewer:** [O]verall what is your favorite element in games? Like, what, what is it about games you really love?
> **Respondent E23**: Headshots
> **Respondent E23** & **E24**: [*laugh*]
> **Respondent E23**: I love 'em.
> **Respondent E25**: That 'tink'
> **Respondent E23**: Headshots. Yeah, that 'tink'
> **Respondent E24**: The satisfaction, the satisfaction of it.

In the interview above, the "tink" the players describe is a distinctive sound effect in *Call of Duty 4*, a First-Person Shooter game; whenever the player fires a shot that hits an enemy in the head, the enemy is instantly killed and players can hear a distinctive sound. This sound effect is representative of the player's mastery of game controls; not only has the player defeated his opponent, but he has done so with enviable style and efficiency. The "tink" is actually a reward for the player, a small but significant bit of praise for their extraordinary performance from the game itself to commend the player's skill and mastery of the controls.

In another interview, two participants mention games like *Guitar Hero* and *Rock Band* which are entire games based around the concept of mastering the game's controls; both games are tests of a player's reflexes, muscle memory, and rhythm, pushing players to master intricate control combinations set to popular music. Here, Respondent E27 specifically says the "work towards perfection" is an enjoyable aspect of the game, making the controls of the game not merely a system for interacting with the fun parts of a videogame, but one of those self-same fun experiences.

For many videogame players, mastering the controls of their favorite game facilitates the accomplishment of narrative or tactical goals. For others, including the participants I interviewed, the rewards of the mastery itself can deepen the engagement that players experience in immersive game play.

Freedom

Several participants highlight the importance of their ability to exert agency in games through a discussion of how they utilize this newfound agency. Two participants describe the

ability to engage with activities that are impossible to do in the real world; Respondent E10 discusses being able to fly, break the law, or other fantastic activities, whereas one relates a story of being severely injured in high school and being only able to interact with the world through videogames (Respondent E16). A third player engages most deeply with *Fallout 3*, a game with a vast amount of player freedom to choose the path of the game, and describes engaging with games featuring "unlimited character customization" (Respondent E6). For Respondent E6, the ability to choose either the path of the plot's development or the path of the character's development is a key element in his engagement with the game world.

For these players, agency in a digital world translates to the ability to do things beyond the limitations of the "real" world. Exploration and experimentation in digital worlds increase the experience of incorporation within the experience of highly immersive games.

Ability to Impact the Game World

If the ability to choose within digital worlds is important for a sense of agency, the ability to make a lasting impact on those worlds with those choices is even more potent in creating that experience:

> **Respondent E26:** I like to have some sort of strategy and I like to feel like I'm actually impacting the world around me, around my character.
>
> **Respondent E11:** … [I]t's just fascinating to, you know, dive into a different world and not only be able to, you know, see the events unfold but to actually, you know, cause them to unfold, you know, change the outcomes.

These comments fall directly in line with Calleja's explanation of incorporation, in that players must be able to meaningfully interact with the environment in order to truly feel a sense

of incorporation into the game world. For these participants, significantly impacting the game world is an important part of their engagement with immersive experience.

Instant Gratification

Finally, another theme within performative involvement is the need for rapid feedback and stimulation. Several players complain about excessively long cut-scenes and introductory gameplay sequences that do not allow the player to immediately begin exploring the game's world and mechanics. These complaints, if analyzed from the perspective of the DGEM, are reflecting the players' dissatisfaction with the removal of their ability to exert agency. While a cut-scene can further the narrative and look very beautiful, many players are interested not in *watching,* but rather in *playing.* By disallowing players to explore their new environments or to further the narrative through interaction with the game world, the feelings of agency are diminished, and if used excessively, cut-scenes can actually be detrimental to the process of incorporation.

Performative Conclusions

Several players describe agency as important in the experience of engagement with immersive games. Adequate design elements and mastery of game controls allow players to incorporate the game's design and controls into their broader game experience, and the freedom of choice and ability to impact the game world allow the players to meaningfully exert their will within the digital world.

Shared Involvement[5]

Shared experience increases player engagement with games in a few different ways. Participants refer to the desire to play against online human opponents for the added difficulty, and also discuss the negative effect that immature or unpleasant human players can have on their game experiences. Using games as a social experience is also important, as several players discuss the importance of being able to play with friends in online and offline games.

Playing with Friends

Before the advent of digital games, the vast majority of games required multiple players; not surprisingly, several players still prefer the social aspect of their games even in the digital age. Seven separate participants list cooperative multiplayer experiences as an important element of their favorite games. Several players discuss being part of a team, and cooperating in competitive play; others discuss the engagement with the "crowd atmosphere" (Respondent E20) of games like *Rock Band*, or complain of games that make joining friends online for a match excessively tedious and frustrating (Respondents E20 & E21). For many of these players, multiplayer is a requirement for their favorite game experiences. Two players also stated that the type of player with which they are interacting has a large impact on their game experience. For Respondent E8, other characters should be people with whom the player "would want to

[5] Because the chosen venue for conducting this first round of interviews was a videogame summit with events designed around multiple player games, responses about the importance of shared experience for enjoyable digital game experiences may be potentially skewed. Since players at this event had traveled at least some distance to play games with or against their peers, multiplayer games and shared experiences are obviously at least somewhat desirable elements of game play for all of these participants. While some interviewees did not mention specifically the importance of human companions or opponents, this is in several cases a failure to ask the correct follow-up questions rather than an indication of lack of interest. For example, several respondents listed *Halo 3* and *Call of Duty 4* as their favorite games; while both games provide excellent single-player modes, these games are most notable for their strong multiplayer online experiences. This lack of proper follow-up was corrected in the second round of interviews.

associate," while the Respondent E11 states that sometimes encountering "unsavory" people online can ruin a game experience.

For most of the participants, they do not discuss in any depth the reasons why they enjoy playing with friends—the enjoyment is considered a given. The discussion focuses on the ability to enjoy those experiences, whether it be the venue of a *Rock Band* game or the ease of joining friends for online matches. With the current level of videogame technology allowing players to connect seamlessly from across oceans, games must provide highly functional and easy to use multiplayer modes in order to meet player expectations.

Competition

For some players, the social aspect focuses more on the competitive edge added by the introduction of human opponents rather than the elements of socialization. At least four players explicitly prefer to challenge human opponents over Artificial Intelligence (AI) controlled opponents, and several more participants made passing references to competitive multiplayer games. Two of these participants state that competitive multiplayer modes are a "prereq" for engaging with digital games, as "one-player games don't do it for me" (Respondents E15 & E16). For a third player, human opponents require the development of more intricate strategies in order to defeat opponents (Respondent E19); for a fourth, human opponents are more interactive, and more frustrating to play against than other people (Respondent E12).

For these players, the difficulty added by human opponents can maintain their interest in playing the game. Competition pits players against one another, and not only does this increase the challenge, but increases the satisfaction of victory as well. Pleasure derived from defeating an

opponent makes victory against human players an enjoyable experience, and increases the engagement with the game.

Shared Conclusions

Staying true to their roots, videogames function very well as a social experience. Whether playing cooperatively or competitively, players enjoy sharing their in-game experiences with others. This shared experience increases engagement with the world of the game, increasing both enjoyment and involvement for the players.

Discussion

The exploratory interviews provide initial support for all six aspects of the Digital Game Experience Model. Participants in these exploratory interviews describe their favorite videogames with a wide variety of responses about a range of different aspects and characteristics, but despite their dissimilarities nearly every answer related to engagement and immersion fit neatly within one of the six categories of involvement developed by Calleja. However, despite this initial support, this style of interview provided data that lacked the necessary depth to truly analyze the fundamental nature of the experiences that players described; yes, several players declare that graphics are an important element in their favorite games, but why? Are they the most important element? Are there differences between high-definition hyper-realistic graphics and stylized artistic representations? These questions are only a few of the many left unaddressed by these interviews. Therefore, a second round of interviews was necessary to delve more deeply into the true nature of the experiences described by these participants.

Chapter 5

In-Depth Interviews

The second round of interviews was designed to refine the methods utilized in the exploratory interviews in order to elicit more elaborate and thoughtful descriptions of elements that are important in highly immersive games. The interviews again consisted of the same two main questions with follow-up items to clarify and expand upon these answers; however, these follow-up items were designed to be more rigorous and comprehensive than those in the exploratory interviews. The interviews were then analyzed for themes related to immersion to discover if the responses given by the participants align with the categories provided by Calleja's DGEM, the themes discovered in the previous interviews, and any new themes that may emerge from this round of interviews. All six types of involvement received strong support as important elements in highly immersive game experiences, as in the previous round of interviews; however, interesting and potentially important observations about the nature of incorporation were also discovered.

Affective Involvement

Respondents in the in-depth interviews confirm the immersive and engaging power of emotions elicited within videogames. A wide range of emotional connections, as well as a wider array of methods used to develop these connections, is illustrated by the comments of the participants. These results are in accord with Calleja's original findings as well, and support the assertion that affective involvement is well represented within high-immersive games.

Graphics/Visual Style/Environment

As with the previous interviews, support is found for emotional connection through visual representation here as well. However, the category expands slightly out of necessity to accommodate additional findings about the environment and aesthetic appeal of the game as a whole, and to move the focus away from hyper-realistic graphics to more of a connection with the artistry of a game. Two respondents discussed high quality graphics as important elements in their favorite games, but only one participant elaborated on the necessity for high-definition visuals. Respondent ID5 indicated that his most immersive game, a baseball simulation, maintained a heightened level of realism at all times, including not only the visual appearance of each character and the environment, but also the commentary from well known sports personalities, allowing the player to relish moments of confusion as roommates and others entering the room initially cannot tell if the game on the television is an actual baseball game or a digital replica.

Other players, however, discuss the importance of the beauty and execution of the visual style. More than one participant asserts that graphical superiority is nice, but if not backed by solid gameplay and/or narrative will render a game unplayable. Respondents claim that attention to detail, or artistic interpretations of reality, are acceptable substitutes for high-definition visuals, and in many cases are seen as preferable. Respondent ID12 frequently professes her love for a highly stylized game based upon Japanese calligraphy, while Respondent ID8 complains of the excessive grittiness and hyper-realism of modern games and expresses a preference for brightly colored and fantastic environments. Furthermore, Respondent ID6 also indicated that while frequently overlooked, soundtracks play a large part in developing the game environment

and tone. An excellent soundtrack can assist the game in eliciting emotional responses, thus engaging the player more deeply within the game world.

When players express a preference for beauty in visual style, they are in fact discussing an emotional connection with the game. This connection may revolve around admiration for the beautiful design, awe at a particularly powerful visual, or more visceral reactions to increasingly realistic graphics. Respondents confirm preferences for attractive graphic and visual design in their favorite games, lending support to the assertion that emotional response and immersive experience are related.

Connection with Characters and Story

Participants expressed strong emotional connections to both the individual characters and as a general reaction to the narrative itself. For at least three players, characters that the player customizes himself elicit feelings of personal attachment. “You put thought into this character, so you should feel connected to it. You created it,” claims Respondent ID1, confirmed by Respondent ID6 who says, “It’s kinda nice…to have like a personal relationship with [your character].” Respondent ID 5 did not refer to character development, and has a slightly different take on the emotional connection he shares with his character: “He’s got my name, he’s got, you know, my look and… I’ve gotta make him the most money because *that’s me.”* By developing personal emotional relationships with their avatars, these players are opening themselves more fully into the immersive experience of the game.

Games that offer no character customization can still elicit strong emotions through the use of evocative narrative strategies and high-quality character development. Four of the participants refer to their favorite games in terms of relating with the designed narrative

emotionally. The most engaging part of the story, for Respondent ID11, was watching the evolution of a “terribly flawed” main character through the experience of a “heartbreaking” story of tragedy and redemption. Respondent ID10, who values narrative as most engaging in his game experiences, felt severe negative emotions when his failure to complete a specific mission earlier in the game led to the death of one of the game’s female protagonists: “you actually feel really sad and depressed that he couldn't save her.” Engagement with storylines that are already of particular interest to the player can also elicit an emotional response from the player. Respondent ID7 describes a deeper connection with games that describe a particular era in world history, while Respondent ID12 professes her love for Japanese mythology, which heightens her emotional connection to the artistic representations of a game based on ancient Japanese legends.

These emotional connections with the storyline and the narrative encourage players to engage more deeply with their game experiences. These emotional bonds increase involvement, and affective reactions to the designed narrative are a powerful component of incorporation for several players.

Frustration

A couple players reported that a common complaint with games which they do not enjoy is feeling frustrated by inadequate or deficient game design, especially in the areas of control. Uncontrollable camera angles, getting stuck in various areas of the game, or encountering otherwise broken game elements frustrate players and decrease game enjoyment and break game immersion. Interestingly, players also report frustration with their favorite games; Respondent ID10 discussed that his favorite game frustrated him often, “sometimes to the point to where it makes you want to throw your controller at the TV,” and Respondents ID 2 and ID5 both discuss

throwing controllers as well. The difference between frustration from broken game elements and difficult obstacles arises from the source of the frustration; for the first group, frustration arises from a failure of the performative elements of the game, because the player is not able to effectively exert agency in the game world either through unresponsive controls or errors in game design. The other type of frustration, however, stems from the difficulty in finding the proper solutions to overcome puzzles and obstacles. The player's own skills and problem-solving abilities are to blame for the shortcomings in the latter, whereas defective code or design in the game itself are the culprit for the former. These interviews support the idea that frustration stemming from tactical elements can be overcome by the attachment to the narrative, or even enhance the engagement by providing more motivation to overcome a particular challenge, while frustration from faulty controls or broken design can destroy the player's perceived ability to meaningfully impact the game and both produce significant resentment toward the game and destroy immersion.

Fun

Every player describes his or her favorite title as being fun to play. The omnipresence of fun, and the fact that fun originates from a composition of other game elements, lead me to believe that a discussion of fun as a form of affective involvement would not add significantly to the understanding of immersion and incorporation. Other researchers challenge the notion that fun is related to engagement in digital games, but supporting or defying such an argument is beyond the scope of the current examination.

Additional Observations

No additional themes emerged from the analysis of the in-depth interviews; however, the increased emphasis placed upon emotional connections in the in-depth interviews is significant. Players readily provide answers about what they enjoy most in games, be it story, tactics, or design. When players are pressed to more thoroughly elaborate on their favorite elements in games, participants frequently expressed strong emotional reactions and bonds with characters that support and enhance the experience of these most enjoyable elements. In this way, affective involvement is shown to be present in many high-immersive games, and serves as an amplifier for the effects of other types of involvement.

Affective Conclusions

Videogames, like other modern media, can be used quite effectively to induce emotional reactions from players through the excellence of other elements: beautiful scenery creates a sense of wonder, intricate plot development produces anticipation and emotional investment in the story, and difficult challenges amplify the sense of satisfaction that victory brings. Conversely, ugly scenery creates boredom, terrible dialogue and inane plot twists produce disbelief and dismay, and unwieldy controls and broken design amplify the desire to stop playing the game out of frustration. Effective use of Affective Involvement is necessary to create engaging, moving game experiences, and is vital for incorporation.

Spatial Involvement

The in-depth interviews provided strong support for the importance of the Spatial element of digital games as a key element of immersive play experiences. Every interview respondent

discussed distinct elements within his or her favorite videogame, which include significant interactions with the game space, either as an expressed preference for exploring elaborate game worlds, a sense of actual presence within the game world, or a combination of both.

Exploration and Interaction

As in the previous round of interviews, gamers list exploration of and interaction with the world as an important element in digital games. Many forms of these experiences exist, as each game world is unique. Some gamers prefer to obtain items and slay bosses through exploring segregated and usually difficult-to-conquer play spaces, known as "dungeon crawling," or to master new maps in shooting games to increase their tactical edge over human opponents. Some prefer to simply pick a direction and run, to see what there is to see, or to find challenges; when asked what makes a game truly excellent, Respondent ID11 replied, "games that allow you to run off from a town your [*sic*] supposed to go to and run way off into the distance to fight enemies way above your level for fun." Whether exploring the environment is useful in determining how to overcome an alert guard or merely an enjoyable pastime by itself, interaction with the game world is key to rewarding and immersive game play.

Participants also desire rewards for their explorations; additional content, interaction, and acquisition of items are sometimes needed to encourage players to stray from the path set forth by the game's narrative. While some players will explore game worlds merely for the experience of exploration, others are hoping to maximize their abilities and acquire improved equipment, in order to further their tactical goals. Alternatively, some exploration allows for further narrative exposition, unlocking information about the story that players might not have accessed without interaction with the world. Respondent ID8 repeatedly emphasized the importance of details

within the game world; among the most important details for this player is the discovery of new and unique items through exploration. Still others utilize exploration to find alternate routes of travel, or alternate methods for accomplishing their in-game goals, either to increase efficiency of accomplishment or to simply expand the experience of game play. Allowing the player to choose between multiple paths to reach a goal increases replay value, as many players wish to play again to explore areas left untouched previously; again, according to Respondent ID8, "I enjoyed the *Sonic* games because not only was there a sense of speed and immediacy, but the levels were very big, and you could take multiple routes, almost making it a different game each time you played it."

While exploration can be an explicit theme of many RPGs, the exploration of the game space is important in a variety of different games. The quotation above describes the exploration of *Sonic: The Hedgehog* games, and the titles that players list range widely not only in game genre (First-Person Shooter, MMOG, Stealth, Action/Adventure) but in platform as well, with systems ranging from the Super Nintendo to Playstation to PC. Allowing players to wander around the environment is a common attribute of games with high favoritism, lending strong support to the necessity of Spatial Involvement for incorporation for many players.

Teleportation

As in the previous round of interviews, teleportation or a sense of presence within the game space is found in highly-immersive games. Respondent ID7 describes his favorite games as an "escape from reality," but where, precisely, is the gamer going? The feeling that "it is [me] who's in there" (Respondent ID1) engages the player more fully into the game. "It's almost like I am that pitcher," relates Respondent ID 5, about playing virtual baseball; "He's got my name,

he's got, you know, my look and…I've gotta make him the most money because that's me. I gotta make the most money for that player." Respondent ID4 describes enjoying a game environment so beautifully detailed and realistic he can just "fall into it," whereas Respondent ID8 desires brightly colored, unrealistic worlds; "It has to be fantastic, colorful, interesting, beyond reality." Immersive videogames, again from a wide variety of genres and platforms, induce feelings of physical inhabitation of digital space, and provide a deeper measure of involvement for players.

Interestingly, several participants discussed the limits to this sense of presence. At least two players (Respondents ID2 and ID7) limit their use of MMOGs to prevent "unhealthy" connection to the game. Respondent ID5 describes the feeling of presence and reality in the game while also simultaneously acknowledging that it is a game, and as such provides a temporary escape from the worries and issues of the daily world. Respondent ID9 feels like an inhabitant of an expansive game world, until he encounters a loading screen[6]; this brush with the game's constraints makes "you realize you're playing a game." These limitations underscore the importance of presence in digital games for some players: self-restriction highlights the extreme enjoyability of the play activity, so much so that it must be limited to prevent overindulgence. Acknowledging the game as non-reality and yet still feeling present indicates the power of the experience and its strong utility as an escape; and "realiz[ing] you're playing a game" means that at some point, the participant forgot that very fact and had to be reminded by an external source.

[6] A temporary placeholder, used by resource-heavy or graphically-intense games, shown to players while the computer or console loads the next area.

Additional Observations

No significant themes within the category of Spatial Involvement emerge from the analysis of the in-depth interviews that were not found in the initial interviews. However, interaction between types of involvement is more common in the in-depth interviews; describing a game world with "beautiful scenery" and emphasizing the importance of background music to set the proper tone for a game are intersections of spatial and emotional involvement; finding new story elements from exploration combines spatial and narrative; discovering new paths to take to overcome challenges pairs spatial and tactical; claiming a Guild Hall as a base of operations for the player and his companions mixes spatial and shared; and making a meaningful, lasting impact upon the game world blends performative involvement's sense of agency with spatial involvement's interaction with the world. For the DGEM, these interactions are not only expected, but necessary for the development of incorporation, and their presence within this data set supports the adoption of Calleja's model.

Spatial Conclusion

For some players, Spatial Involvement provides the strongest draw into the game space; for others, it compliments other elements to increase the enjoyment of improving one's character, revisiting previous levels to uncover more of the narrative, or finding new tactics to overcome challenges. Strong spatial involvement allows players to enter a digital world, and can seamlessly combine with each of the other types of involvement to move beyond entry and incorporate players into that game world as inhabitants.

Narrative Involvement

As in the previous section, the in-depth interviews provide strong support for Narrative Involvement as framed within the DGEM. Many of the participants indicate that storyline, characters, and plot development techniques are important in the games they enjoy, and for some Narrative Involvement is the single most important aspect in determining their game preference. Most of the data on Narrative Involvement focuses on the designed narrative, but several respondents relate significant personal narratives as well.

Designed Narrative

Many of the gamers interviewed are motivated to play games based on the quality of the designed narrative. Ten of the thirteen interview participants mention the importance of the storyline in the games they played; five of those players listed storyline as the most important element in their favorite games, lending support to the idea that narrative involvement is related to highly-immersive game experiences.

When asked what they enjoy about their favorite games, many players' responses indicated they enjoyed the storyline; when pressed for more details, players provided a range of different and occasionally profound answers. Participants express significant engagement with the story in a variety of ways. Respondent ID2 discusses meaningful choices that alter the behavior of game characters, such as saving a water supply and receiving thanks from the townsfolk, or destroying the same and receiving open hostility from the same. Respondent ID7 is a World War II history aficionado, so his favorite games revolve around WW II-era storylines, while Respondent ID12 enjoys Japanese history and mythology and her favorite game is a combination of stories pulled directly from those legends. Still others discuss excellent pacing,

narrative techniques, engaging characters, and other elements that compose their favorite storylines. Several participants mention that they have replayed their favorite games multiple times, and for each of those players, re-experiencing the storyline is always one of the top reasons for the replay.

As likely as players are to name excellent storyline as one of their favorite elements, they are faster to point out bad storylines as one of the fastest ways to make a game unplayable. Poor dialogue, implausible plot devices, nonsensical plot twists, forced player options, repetition, and predictability are some of the most common answers when players are asked to describe their least favorite or most hated element in videogames; as Respondent ID8 eloquently expressed, "You can have all the graphics in the world, but if you're going to build your storyline out of the "what NOT to do" school of exposition, I mean, it's just, like cotton candy; it's pretty, but it's not filling." The importance attached to the storyline may vary between individuals, but a sub-standard storyline is almost universally hated.

Conversely, several players mention that an excellent storyline can overcome deficiencies in other areas. For Respondent ID4, a good storyline might mean the difference between playing a game once or replaying it many times; for others, it might mean playing an entire game that one would not play otherwise. For example, *Final Fantasy VII* is widely regarded as having one of the best storylines in a videogame, and is also renowned for innovative gameplay and (at the time) technological advancement. One sequel and one prequel videogame were released that expanded upon the original game's plot, but changed gameplay significantly. In this study, both of these games are mentioned by two different players (Respondents ID4 and ID11), who both note that they did not enjoy playing the games but completed them anyway in order to experience the expanded plot of the story. These two players are so strongly involved with the

narrative of the original game that they acquired and completed an entire game, one that they did not enjoy, just to continue the plot.

Interaction with the designed narrative is one of the strongest predictive elements of high levels of engagement with a specific videogame. Narrative involvement can be so powerful as to gloss over other deficiencies of a game, drawing players into investing large amounts of time replaying games, or even coercing gamers to purchase and complete an unenjoyable sequel, simply to expand the plot of the original. Having an excellent narrative is crucial for the incorporation of many players into the game world.

Personal Narrative

The importance of engagement with personal narratives is supported moderately in this round of interviews. Personal narratives are more common in MMOGs, in which storylines are optional and the addition of human companions increases the likelihood of emergent situations, as well as providing witnesses to verify such stories and friends who were there with whom the player can reminisce. Players who preferred MMOGs are more readily able to provide a personal narrative, and the stories almost universally describe interactions with other people within the game world; Respondent ID7 describes a chance encounter with other players that led to praise for the skillful execution of a difficult raid and developed a bond of friendship with other players, while Respondent ID9 describes the unexpected generosity shown to a new player by older players in *Everquest 2*. Two respondents, ID1 and ID2, friends in real life, describe their preference for opposite factions in *World of Warcraft*; in order to play together cooperatively, one must change sides, and they let their personal distaste color the interview:

> **Respondent ID1:** Yeah, with the whole Horde and Alliance thing. You, I was, I played Horde for almost a year, and then he's on Alliance. He was like, "Come make a character with me." I was like, "eeehhh..."
> **Interviewer:** So you were actually, you, you were feeling the in-game rivalry.
> **Respondent ID1:** Right. I … that and I, I hate the races on that, I mean, Gnomes are little, annoying, squeaky people.
> **Interviewer:** [laughs]
> **Respondent ID2:** And Tauren are huge, annoying bull people. We've learned to get along with this.
> **Interviewer:** OK, you've learned to, to settle your differences, or to agree to disagree.
> **Respondent ID2:** Yes.
> **Respondent ID1:** Until he plays me in a PVP[7] server and then I just kill him.
> **Respondent ID2:** And then just all bets are off.

While the factions are provided by the designed narrative, these players internalize their relationships with the provided races and are now interacting with the narrative outside of the game space. The dislike for the various races, as well as their personal clashes within the game world, are no longer part of the designed narrative, but are based on internalized opinions and values.

Another interesting observation of personal narrative came from Respondent ID12 who describes a game that she thoroughly enjoyed as "one of the stupidest games EVER." When asked to elaborate, she provides a detailed description of game mechanics and a plot that are not the most intriguing, but they enable her to interact with her friends in various ways (including being able to mildly harass her friends as she runs away gleefully), even going so far as to relate a gathering at Christmas one year where she and her friends distributed in-game gifts to one another. Without these interactions and the interesting stories developed with her friends, it is unlikely that this title would have been as enjoyable for the her.

[7] PVP stands for "Player-versus-Player," which is a game type in which human players may choose to engage in combat with one another. This is contrasted with PVE ("Player-versus-Environment"), which is a game type in which players may only engage in combat with computer opponents. These game types are both common in MMOGs.

Personal narratives, like the ones referenced here, are excellent ways to extend the engagement with a game as well as excellent ways to blur the demarcation between real-space and game-space. These narratives produce (or rather, are produced by) variety and unpredictability in games, and serve to extend beyond the reach of the game session, blurring the line between play space and non-play space; the addition of real human interaction into a game space destroys the ability of the player (or the researcher) to determine where game and reality intersect by thoroughly intertwining the two.

Additional Observations

No significant themes are found in this series of interviews that would add to the exposition of narrative involvement. However, elements of narrative involvement are found to increase the engagement of players when combined with other types of involvement; a desire to learn more about the narrative leads to spatial exploration; defeating a boss solely to earn the cut-scene and continue the story blends tactical and narrative involvements; the ability to make a visible impact on the story through player choice reflects the intersection of performative and narrative elements; replaying games with a friend or making personal narratives with companions are elements of shared narrative involvement; and developing characters and plotlines that elicit powerful emotional responses from players crosses narrative with affective involvement. These combinations are in line with Calleja's assertion that these elements do not exist alone within digital games, and also supports the combined model of incorporation.

Narrative Conclusions

Involvement with both the designed and personal narratives increases players' engagement with a game, and this importance is strongly supported by participant responses. The development of an excellent storyline can engage a player so strongly that he or she will play through games repeatedly to re-experience the story, turn a blind eye to the faults in a game's technical execution, or even purchase sequels that are less enjoyable simply to continue the narrative. Adding human co-inhabitants to digital worlds decreases the importance of the provided storyline, but develops personal narratives which serve to engage and entertain the player. Without a doubt, Narrative Involvement is one of the strongest elements of incorporation for many players.

Tactical Involvement

Players interviewed in this study become tactically involved in a variety of different ways. For some, overcoming challenges provided by a game and beating it on every difficulty level are the top priority in play; for others, putting a great deal of thought and planning into elaborate character customization is most desirable. In nearly all cases, however, the methods and strategies for overcoming obstacles and achieving goals play an important role in the experience of highly immersive games.

Difficulty Level

Not as many respondents explicitly mentioned difficulty level in descriptions of immersive experiences in the in-depth interviews as did in the initial interviews. However, several respondents discussed the importance of challenging content; one of the best parts about

Metal Gear Solid, according to Respondent ID10, is the variety of different strategies needed to defeat the bosses, though he does warn that the difficulty "makes you want to throw your controller at the TV." Respondent ID9, an ardent fan of MMOGs, praises his favorite game as "the hard version of *W[orld] o[f] W[arcraft]*," which accounts for a higher population of older players, as younger players may lack the dedication to engage with the more difficult world.

Players also discuss the need for gameplay to keep them interested, as well as the dangers of excessive repetition; some respondents emphasized their dislike of stagnant, repetitive gameplay as an example of a way to effectively ruin a game. Again, maintaining an optimum difficulty level may not be foremost in the minds of players, but when skill level and game difficulty fail to synch with one another, the immersive experience suffers due to boredom or frustration.

Human Opponents

Again, the addition of human opponents increased variety and unpredictability for players, but not all participants described this interaction as a positive attribute. For one player, the addition of human opponents is crucial in gauging personal skill and learning new tactics and strategies:

> **Respondent ID5:** I want to be able to get online and play with other people, and see how my skills rate up to other people. I'm not a professional gamer by any sorts or means, I'm not even that great, but you know I just like to think that I'm a good player and there are other people out there who can maybe teach me to play better, or challenge me. So, it's really important.

While competition is a key element of shared involvement below, it is important to note this experience here as well, as the challenge posed by human opponents, and the potential for self-improvement, are strong tactical considerations for this player. As another respondent noted:

> **Respondent ID6:** [P]eople react differently than a machine. A machine is, as random as they can be within their coding, they can only be so random. Eventually you figure out what the trick is, and you get around it. And, people have habits, just like machines have code, but people can change their habits. They can change the way they play the game. Whereas a machine, once it's set, it can't do that. So, playing against people online allows you one, to change the way that you play, and two to adapt to how other people play. So, it's pretty entertaining for that fact; it's almost never the same, whenever you play a game.

For these players, the inclusion of human opponents in their preferred games increases not only their engagement with shared experience, but also their engagement with the more strategic elements of involvement.

For other players, however, these interactions are not as positive. Respondent ID8 declares a preference for computer opponents, because, as he says, "with the computer, you can feel better about losing to it because it's designed to be better than you, but there's always a matter of pride with me if [I] lost against a human opponent." For this respondent, the increase in variety and difficulty fails to outweigh the negative emotions that arise from defeat at the hands of a human opponent. Respondent ID7, when asked what elements will ruin a game, lists an "obscene advantage" by one side or the other in multiplayer games; human opponents must present a challenge, but not so much so as to be insurmountable.

Positive or negative, several players describe the impact that human opponents have upon the tactical involvement element in high-immersive games, marking it as an important aspect of games for some players to seek out and others to avoid in optimizing levels of engagement.

Multiple Character Options

Character customization and player choice in character development are very important issues for several participants. Six participants listed character customization as one of the most

prominent elements of their personal favorite games, with several of those going into detail about the exact nature of their favorite types of customization. For Respondent ID5, being able to choose between a score of teams in his favorite sports game is important for the variety of tactical differences available. Respondent ID2 engages with the development of a character in a game with over a thousand skills to choose from, but where the player can only select eight; the high level of planning that developing a character requires, as well as the uniqueness of each character, were both significant aspects of his tactical involvement with that game. Several participants discuss this importance of unique characters; developing a character to better fit the player's style and preferences is more important than matching some external ideal, and deepens the relationship between the player and the avatar on screen. For these players, the ability to personalize and improve their avatar increases connection with the character and more deeply engages the player in the tactical considerations of not only how to overcome obstacles, but how to empower, develop, and evolve their chosen avatar.

Achievements

Achievements, whether provided by game challenges or developed by the player, are not strongly supported by these participants. Respondent ID5 mentions achievements in passing, as part of a discussion about being a completionist; few players discuss the importance of self-created goals within the context of these interviews. Future research may determine if self-developed goals or achievements are an important element within a larger sample.

Thinking Outside the Box

Inventive puzzles, lateral thinking, and interesting or unusual objectives are important elements of several participants' experiences. Specifically, two participants relate the importance of this game element through stories and examples from their favorite games. Respondents ID1 and ID2 discuss a mission where the player is locked unarmed in a house with seven computer characters, and must eliminate all seven of them by convincing them to fight and kill one another through dialogue options, or by planning and executing elaborate tricks to convince the characters that they mean one another harm. This type of lateral thinking and strategic planning increases the sense of satisfaction that the player receives from the success of the mission, amplifying his engagement with tactical involvement in the game. Respondent ID10 describes the difficulty in determining the correct strategies to overcome the boss battles in his favorite game. For example, one boss has psychic abilities, and therefore can read the player's mind and react too quickly for the player to damage him; the player has to physically unplug the game's controller and plug it back into a different controller port to overcome this disadvantage. Requiring this type of unusual strategy is frustrating for the player, but ultimately adds a pleasurable amount of variety and novelty to the game experience.

Additional Observations

Two new themes emerged from the examination of the in-depth interviews that were not prominent in the initial examination: Completionism and Rewards. For Completionism, Respondent ID5 specifically references the need to beat games on every difficulty level, unlocking every secret, and accomplishing every task; other participants also discuss finding secrets and unlocking new content. It is possible that the need to conquer not only the goals

provided by the main storyline, but every goal in the game, is more prevalent than what is found within this sample; further research would do well to look for this type of tactical involvement in future studies.

Rewards for completing goals may be autotelic, like the sense of accomplishment noted by Respondent ID8 that he feels in developing a character from level one to level one hundred, or may be utilized in the satisfaction of other types of engagement. Respondent ID12 fights to overcome a boss in order to access the cut-scene afterward and expand upon the narrative. Other players may level-up their characters for hours in order to face more difficult challenges, defeat enemy human opponents, or simply become strong enough to explore more of the game world without being instantly killed by roaming enemies. Each of these situations, referenced by the participants, illustrates the intersection of tactical involvement with each of the other elements of incorporation, and the importance of these confluences to the development of enjoyable and immersive play experiences.

Tactical Conclusions

Through a wide variety of strategies across a broad expanse of genres and platforms, utilizing unique and inventive tactics to overcome obstacles and accomplish goals is an extremely immersive element for many players. Matching skill and difficulty levels, providing appropriate rewards, and allowing players to experiment with and develop new techniques for playing games can engage the full mental faculties of the player, and this intellectual stimulation creates the necessary atmosphere for player incorporation. The respondents in this study readily verify the importance of tactical involvement in their personal immersive experiences.

Performative Involvement

The ability to effectively exert agency, whether through player choice or simply through the extension of the player's will into digital space through a controller, is referenced by several participants as an important aspect of both their favorite games if executed correctly and of their least favorite games if executed poorly.

Effective Game Design/Controls

As in the previous round of interviews, participants report shoddy game controls and ineffective game design as key elements that will interfere with their engagement with a game. Avatars not responding properly to player input, uncomfortable control schemes, and other broken elements within a game's design disengage the player from the game experience. Respondent ID13 passionately describes poor camera angles as his personal "pet peeve": "It just ruins the immersion so much, I guess. That's like the biggest instance, I think, of where the code gets in the way of the game experience." This objection stems from the interruption of the player's ability to fully view and understand the game state, which severely limits his ability to act intelligently within a game space. For these participants, bad controls and broken gameplay elements reduce their sense of agency, and detract from any engagement the player might otherwise have enjoyed. When done correctly, these elements fade into the background of the mind, allowing will to translate into action with conscious thought; when done poorly, players must actively think about how to exert their will in the game world, and if unable to do so will become frustrated and unengaged.

Mastery of Game Controls

Two participants specifically reference mastery of the game controls and agency in the discussion of their favorite highly immersive games. For Respondent ID6, extensive experience with games within each genre increases ability in fighting games and first person shooters; fighting controls can be shared between games, easing the player's difficulty in learning the timing and necessary button presses for advanced combination attacks, and for shooters, according to the participant, "You know how tall a character model is, so you're gonna know where their head's at every single time." The player combines familiarity with the genre with personal ability to increase effectiveness in exerting agency. Respondent ID7 connects with the game tokens in real-time strategy games, explaining, "for me, probably the first thing that draws my attention is the units, the individual units, to see their strengths, their weaknesses, and to actually see them on the battlefield." These units are the agents of the player's will, and examining and mastering their particular abilities and attributes is an important aspect of this player's involvement with the game world.

Freedom

Participants often cite freedom to experiment and freedom of choice as two engaging aspects of highly immersive games. Two participants refer to the freedom to explore and engage with the environment as they saw fit, as discussed more thoroughly in the Spatial Involvement section. Respondents ID1 and ID2 refer to morality choices as interesting elements of their favorite games, as these games force players to consider the ethics and impacts of their tactical and narrative decisions. Respondent ID11 professes his love of freedom, in response to a question about elements that make a game truly awesome, by saying, "the ability to just screw

around and have it work; run off from the plot and do things, or develop a strange pattern of gameplay that actually works." Freedom, he says, must "be in there to some degree. It doesnt hafta [*sic*] be the main element, but letting a player choose their own path is the biggest part in both making a game fun, and in making a game stimulating."

Ability to Impact the Game World

Being able to make a lasting impact within the game is explicitly mentioned by several of the research participants. Player choices which help or harm Non-Player Characters (NPCs), say two respondents (ID1 & ID2), are more meaningful if they have actual consequences for the player; for instance, "if you save this group's water supply, they'll become your friend and sell you things, or you could have destroyed their water supply and then they'll shoot you on sight. Because you actually feel that I deserve the reaction I'm getting from these people." Respondent ID11 loves the fact that, in his favorite RPGs, advancing the plot, overcoming difficult bosses, and unlocking specific secrets create significant reactions from the NPCs and alterations to the game world; "the extra-mile gameplay gave REAL storyline results." This ability to make lasting and significant changes to the game world is very important for these players.

Instant Gratification

No significant theme of instant gratification arises from examination of the in-depth interviews; however, it is possible that future research may find more conclusive evidence of its presence or absence as an important theme of performative involvement.

Additional Observations

Again, the blending of different types of involvement is a common theme within the respondents' favorite games. Defeating a boss and having the NPCs sing the player's praises combines performative, narrative, and emotional; being able to run to a far-off area to fight monsters well beyond the strength of the player mixes performative with tactical and spatial. These combined experiences are both more valuable to the player and more instrumental in the production of incorporation.

Performative Conclusions

In the background of the game experience for most players, performative involvement is rarely the foremost consideration for participants in describing what they enjoy most in immersive titles. However, with deeper examination, many respondents discuss the importance of performative involvement in conjunction with other elements, and scorn games which fail to adequately perform in the performative category. If done properly, performative involvement can significantly improve and enhance the enjoyment of the other elements of involvement for many players.

Shared Involvement

Despite the change of venue away from a multiplayer videogame environment, many research subjects still report a high engagement with and strong interest in multiplayer game experiences. Cooperative and competitive play remain two central themes of shared experience, but some interesting results also arise from the discussion of single-player games.

Playing with Friends

Cooperative play is strongly supported by five research participants. Four of these participants (ID1, ID2, ID7, and ID9) make these observations about their preference for MMOGs, where one of the main foci of the game is obviously the social component. All four players mentioned being affiliated with an in-game group of players, or guild, in various levels of involvement. Three of the participants report playing MMOGs with friends from outside the game world (ID1, ID2, ID9), two report that they prefer to play only when they can play with each other (ID1, ID2), and one attempted to recruit the researcher to start an account in his preferred game (ID9). For the fifth player, Respondent ID6, his preference for multiplayer games grew out of necessity: "[F]or someone like me I have three older sisters, and I always had people come over to my house, so multiplayer games were really fun because one, you're never leaving somebody out […] and two, you have more fun with other people. It's just easier to do it that way." For these players, not only is the appeal of games increased by the addition of friends, but the inclusion of multiplayer may actually be a requirement for games they enjoy. Consequently, shared experience is extremely important to these players.

Competition

More players mention competitive multiplayer as an important part of engaging game experience than players who mention cooperative play. The two players mentioned above (ID1 &ID2) who prefer to play with one another cooperatively are also just as likely to turn on each other and fight, though more in friendly competition than serious betrayal. Respondent 9 discusses a dueling system in his game of choice, where he can earn new weapons or armor by wagering on the outcome of a PVP duel, allowing item acquisition to increase the excitement and

tactical considerations involved in competitive play. For Respondent ID5, the inverse is true: “I just pick up and play with whoever’s on.” He continues on, explaining, “I’ve moved around so much that like, it’s kinda hard to keep you know, in contact with all your buddies.” For this same participant, testing his skills against human opponents online is one of the most necessary elements in the games he most enjoys, as he cites gauging his skill against that of others and learning from opponents as required elements for engaging with multiplayer games. Respondent ID6 touts the benefits of human opponents in providing unpredictability; machines can only be as random as their code permits, whereas human players can adopt any tactic and change tactics spontaneously. For many gamers, the competitive aspect of videogames adds a deeper element of involvement and interaction to their play sessions, and increases enjoyment and engagement.

Additional Observations

Two new and interesting themes developed in the in-depth interviews. One theme that did not arise in the preliminary interviews is the sharing of a single-player experience amongst multiple players. Respondents ID10 and ID12, who both list narrative and emotional connections as the biggest appeals of their favorite games, mention that not only have they replayed their favorite titles, but that they have also watched other people play the games as well. For these two players, either the connection with the narrative is so strong that they still enjoy watching the game play, much like viewing a favorite film, or being able to share the experience with friends adds an additional element of enjoyment to the game experience. Despite the inability to directly exert agency within these game sessions, both of these players engage deeply with the game experience, especially considering the large time commitment required to view each game to completion. This observation strongly supports the fluid nature of involvement, and highlights

the importance (and unimportance) of the different types of involvement amongst different players.

The second theme observed in these interviews is shared experience with the NPCs (Non-Player Characters). Three participants cited high levels of performative involvement, engaging strongly with games that allow the player to impact the game world in a meaningful way; however, each of these three players also discussed enjoying the reactions of the non-player characters to the actions the player takes within the world. For Respondents ID1 and ID2, having NPCs thank a player for saving their village (or alternately seek revenge if the player chose to destroy the same village) adds to their engagement with the game; the desire to make a lasting impact in the game world is amplified by the addition of an audience that will acknowledge the player's choices and actions with appropriate responses. Respondent ID11 discusses the narrative benefits of NPC interaction; in *Chrono Trigger*, he says, "the extra-mile gameplay gave REAL storyline results." For these players, as for some participants in Calleja's original study, the NPCs can provide the same sort of shared experience as a human character, if they respond meaningfully to the player's actions, deepening the play experience of single-player game experiences.

Shared Conclusion

Social interactions are very important aspects of the play experience for several of the research participants. Whether cooperating with or competing against human opponents, or sharing a single-player experience with a friend, the addition of an audience for in-game actions and fellow players to share interactive experiences increases engagement and enjoyment for several players.

Observations Outside of the Model

Two significant themes arose within these interviews that do not entirely fit within the Digital Game Experience Model; game length, and immersive experiences that do not include all six aspects of the DGEM.

Game Length

Six participants, when asked about important elements in their favorite games, mentioned the importance of the length of the game. While not an element of the moment-to-moment play experience, game length can enrich or cheapen the game experience for the players, depending on their preferences. The six players in the in-depth interviews and two participants from the exploratory interviews expressed a strong preference for games that have a significant length, or which possess game elements that increase the replay value. Games that are too short cheapen the game experience for some players, who may feel that their financial commitment in a game purchase is better directed to games with longer effective life-spans. Conversely, Respondent E27 relates a sense of boredom if games last too long; too intense of a time requirement can discourage players from engaging with games that may require upwards of one hundred hours to complete. This theme is significant because it was frequently mentioned as an aspect of what players consider their favorite games; with nearly half of the participants of the in-depth interviews expressing the importance of this aspect of gaming, further attention and examination is warranted, and the potential importance of the length of the game experience should be explored. This element was not included in Calleja's original model because the two games he examined, both MMOGs, do not have a finite game length, as they do not have an ending; players of those titles can continue playing indefinitely, and since developers continually update

these titles with new content, will most likely never fully complete every task and see every sight within the game. The vast majority of non-MMO videogames do not share this aspect; to expand the DGEM to include all videogames, game length must be accounted for within the model.

Frustration

Like game length, frustration provided interesting observations that did not fit neatly into the DGEM. While frustration is a component of emotional involvement, it is most aptly described as a separate category of experience. When used properly, frustration can motivate players to increase interaction within a game world in order to overcome the boss, reach the next level, or perfect their play styles. When unaccounted for or properly channeled by developers, then frustration leads to unenjoyable play experiences, broken immersion, and increased tension. The difference between these two experiences, as revealed by the research participants, is the source of the frustration itself. The positive frustration experience derives from the player's internal shortcomings; "I can't beat this boss" or "I'm having trouble with this puzzle." Here, players are motivated to improve their skills and abilities in order to overcome their personal shortcomings. Negative frustration experiences, however, originate from faulty game elements; "The game is broken" or "the controls are sticky." When a player cannot overcome a boss because he has not yet discovered the correct strategy, or has not yet mastered the timing necessary to execute such a strategy, he can become determined, and repeat the attempt multiple times; his success then becomes a personal accomplishment. When a player cannot overcome a boss because the camera angle shifts unexpectedly, the controller does not respond adequately to his commands, or the in-game enemy has an obscenely unfair advantage, the player can become demoralized, upset, and sometimes disgusted with the play experience; such a player is far more

likely to stop playing than to repeatedly pursue a goal he cannot reach due to the inability to exert agency within the game world. As such, negative frustration stems from tactical (unfair difficulty), performative (inadequate controls), narrative (inane or non-sensical plot developments), spatial (becoming stuck on the game's environment), or shared (deviant player behavior) elements as well invoking an affective response within the player. Future research into the nature of, and essential differences between, positive and negative frustration would be very beneficial for game developers in order to learn ways to encourage the former and avoid the latter.

Immersive Experience Without All Aspects of DGEM

No single participant referenced all six aspects of the DGEM as important elements of their favorite game. One participant included five of the six elements, and many participants referenced three or four as key elements of their favorite games, but no one player referenced all six. According to the initial design of the DGEM and the provided definition of incorporation—*the subjective experience of inhabiting a virtual environment facilitated by the potential to act meaningfully within it while being present to others*—none of these players experienced complete incorporation within their favorite games. Not only did players not mention experiencing all six elements in their discussions, several participants specifically discuss *not* engaging with certain elements. For example, Respondent ID12 engages strongly with the narrative, but does not inhabit the game world: "[I]t's more like watching a beautiful world […] I feel emersed [*sic*] in the story like I would listening to an old storyteller telling a really well-told story, but not in the same way as when I read the book myself and invision [*sic*] myself as the main character." For Respondent ID13, the narrative plays no part in his immersive experiences; in his answer to

“Why do you play videogames?” he explains, “it's not for story or anything... it's for entertainment purposes.” According to the original definition of incorporation, neither of these players experiences incorporation while playing their favorite games, despite their obvious strong engagement with those titles; the former participant reported playing her favorite title four times to completion. The DGEM may need to be shifted to accommodate the presence of games or players that do not require all six elements for incorporation.

Another notable observation is that no player discusses feeling highly immersed or references a favorite game that includes only one or two elements of the DGEM. In fact, three seems to be the minimum; when discussing immersive experiences, at least three types of involvement are present at all times. In a wider discussion of games, players might reference all six types of immersion, but when discussing a single title in depth, all participants (In the In-depth interviews) ranged from three to five types of involvement, often with a hierarchy of importance among the different types of involvement. This finding might be quite useful in future research, as outlined below.

Also of interest, several players referenced two entirely different sets of preferences for games. Respondent ID8 usually prefers focusing on engaging narrative and intricate tactics for his play experiences, but sometimes chooses to play faster, twitch-reflex games with higher levels of spatial and performative involvement. Several players express two different sets of criteria, one for single player and the other for competitive multiplayer game experiences. These different sets combine to form a sort of “preference profile,” in which a single player can define his or her favorite play experiences through not only genre and subject matter, but also through the different combinations of involvement that he or she experiences and the relative importance of each category to his or her personal preferences. For the player mentioned above, his

responses about his favorite games may indicate his preference for Narrative-Affective-Tactical games, whereas his need for speed and immediacy is Performative-Spatial-Affective; more research is needed to discover if these profiles hold predictive power for players.

Outside Observation Conclusion

Despite the large amount of data collected about immersive game experiences, little information was found to dispute the assertions and categories provided by the DGEM. Game length was the only significant theme that arose from the data that truly did not fit the six-sided model; perhaps game length could be added into the DGEM as a separate Macro-Involvement category, or one of the six existing aspects could be revised slightly to include this new observation. The six aspects of Calleja's model found strong support as being highly correlated with immersive game experiences, and were also supported as comprehensively describing those experiences. The definition of incorporation as the confluence of all six categories, however, did not find any support within these interviews, and the implications of this lack of support are listed below.

Chapter 6

Conclusions and Directions for Future Research

Digital Game Experience Model Support

The in-depth interviews support the majority of the themes and observations from the initial round of interviews, and both sets of interviews provide strong support that the six experiential categories developed by Calleja in the DGEM are key categories of play experience for all of the gamers involved. Furthermore, in the discussion of highly immersive games, no significant themes, other than the length of the gameplay experience, arose to challenge the comprehensive nature of the DGEM; nearly all of the aspects of immersive games that players enjoyed fell somewhat neatly within the six categories of the DGEM. Even aspects of games that players did *not* enjoy are failures of a game to engage the player in one or more of those same categories, providing support for the assertion that high involvement in the six categories leads to immersive experience whereas low involvement or even negative interaction with at least some of these aspects can break the sense of immersion for the player. Furthermore, the in-depth interviews provided significant evidence that these aspects of engagement do not exist separately from one another in highly immersive games; combinations of these aspects, between three and five elements for each individual game, are reported by all research participants in the description of why they enjoy their favorite games.

One of the original purposes of conducting this research was to attempt to validate Calleja's model with a different subsection of the gamer population, and the data has strongly

supported the DGEM despite a vast change in sample demographics. All of the players in Calleja's original study were drawn from and interviewed within one of two popular MMOGs; the participants in my own study were chosen specifically to maximize the inclusion of console gamers, and the interviews were not conducted within an active game space, removing the players from the possible influence of the immediacy of the game world. Calleja conducted his research from New Zealand, but drew his research participants from all over the world, through the use of digital technology; all of the participants for this research are geographically localized to the South-Eastern United States. Despite the differences in sample demographics and interview methodology, the data from the current research supports the use of the DGEM in identifying and describing the factors that are common in highly immersive games, and can be assumed to be related to the production of the experience of immersion.

What this research does *not* support, however, is the replacement of the blanket term *Immersion* with the concept of *Incorporation* as defined in Calleja's original model. Several players reported immersion, and described deep, engaging, immersive experiences from their own personal play history, but none of them referenced these experiences and the inclusion of all six of Calleja's elements. These interviews most strongly support a view of incorporation that includes a combination of the six aspects of the DGEM but does not require the inclusion of all six. Players reported experiencing immersion when deeply engaged with a combination of three to five of the game elements, but the combination and priority of components varies from player to player. For each player there are one or more specific combinations of aspects and levels of importance that reflect that player's optimum level of involvement, and these sets of involvement combinations form a "preference profile" for each player. This observation could have a strong impact on the usefulness of the DGEM in predicting player preference and assisting game

developers in accurately producing titles which produce immersion. By analyzing player involvement with popular titles, a researcher could develop a database of common combinations of engagement. For example, if a large sample of players who enjoy a specific title all describe their engagement as Narrative-Affective-Tactical, then players who know they enjoy N-A-T games, possibly learned through the use of a game preferences survey, can search the database to find games that not only match their preferences for genre and content, but also elicit their preferred type of involvement. If this model holds predictive power, then players could make purchase decisions based upon preference profiles, rather than the subjective 10-point scale; designers could see which combinations of game elements are most successful, and work to produce games that elicit a specific type of immersive experience. The development of preference profiles could very possibly alleviate a great deal of the consumer's uncertainty about new game purchases, and give game designers a more detailed roadmap toward the development of more engaging titles.

Applications

I suggest that the DGEM, along with the observations listed above, be utilized in the development of a comprehensive consumer rating system for videogames. Codifying games according to the six aspects of involvement contained within the DGEM could provide players and distributors with a far more personalized (and, if future research validates the predictive power of the model, accurate) recommendation system, rendering the ever-present and often criticized 10-point scale irrelevant. Each gamer can develop a set of "preference profiles," which is essentially a list of involvement combinations that produce the most enjoyable and engaging play experiences for that individual; distributors can then match these player profiles to games

that match these criteria, creating a far more personalized set of recommendations for each player's videogame preferences. Players themselves could provide the coding for each individual title; after playing a specific title, players could go online to a centralized database and rate the game on how they personally engaged with it, as well as supplementing these involvement ratings with a 10-point enjoyment index. Here, the generalized rating of a game provided almost arbitrarily by videogame magazines and websites can be replaced with a far more applicable index rating, allowing players to find deeply engaging games far more easily. This new system decreases uncertainty on the part of the consumer and increases targeted marketing and distribution for the producer.

Limitations

The sampling methods utilized in this research did not provide as generalizable a sample as I had hoped. Access to more resources, such as larger target populations, additional researchers, or travel funding would have greatly increased the ability to collect an adequately randomized sample. Furthermore, the sample used in this study provides a wealth of information on the dedicated, or hardcore, videogame player. The results of this study shed valuable light onto the attitudes and behaviors of this demographic of gamers, but does not adequately describe the dispositions of casual gamers and non-gamers. It is possible that these groups would have different relationships with the games they play, as they are differentiated from the current sample by the lesser extent to which they interact with games. Future research into these populations could yield valuable insight into the applications of the current study's results into these groups.

Larger samples from a diverse geographic area would have been beneficial. With adequate resources, generalizability can be greatly increased to cover a wider variety of gamers. Data from players from different cultures and different countries would be especially valuable, to test the potential universality of the theories posited by the DGEM.

Future Research

There are two suggested directions for future research: validation and prediction. Further research is needed to validate the model as established by Calleja and the observations reported in this research report. Different techniques and research methods which focus the examination upon the elements that compose immersive games would be useful in validating both sets of observations; special attention should be directed toward the interaction between the different combinations of types of involvement, looking specifically to see if there are common combinations reported by players as the most or least effective in developing and maintaining engagement. Also, studies should examine closely the issue of incorporation, and the difference between the six-element model advocated by Calleja and the smaller, combination model described in this study, to see which model is most suitable for further use and development. Also, recreating either Calleja's or this study's research with a different sample could provide even more valuable insights; different countries and cultures could produce new and different results, or provide an extra measure of validation to any further research results.

Testing the predictive power of the model is the next step in the development and elaboration of the DGEM. Electronic surveys and questionnaires can be used to ask about player preferences for involvement profiles in games, and based upon answers to the survey questions, participants can be asked to rate game titles that are known to match the player's profile.

Quantitatively analyzing the correlation between predicted game preference and actual supplied ratings will provide a measure of validation for the predictive power of the model. Repeated tests can refine the model, which could then be usefully applied in the development of a new ratings and suggestions system, revolutionizing the way that players choose the games they wish to play.

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