

wanted:Guild
Narrative through Exploration in Virtual Reality

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Chester Cunanan

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Dedications

I dedicate this thesis to all the people, real and virtual, who I have met in *World of Warcraft*. Your participation in this thesis and the experiences and stories you've shared with me will always be held close to my heart. Your love, support and friendship through the toughest of times and the worst of news planted the seed that would eventually become this thesis. It is as much yours as it is mine.

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Finally I dedicate this thesis to my boyfriend, Will. We quested, raided, and we fought over loot together. You made *World of Warcraft* not just a game but a memory I will always hold dear. This is for you.

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Chester Cunanan

wanted:Guild

Narrative through Exploration in Virtual Reality

Jichen Zhu, Ph.D.

Theo A. Artz

Dr. Glen Muschio, Ph.D.

The continuing integration of stereoscopic technology into the mainstream allows for the opportunity of new methods of narrative presentation. By leveraging postmodern concepts of simulation, hyperreality, and the metanarrative, with interactive narrative theory, a narrative experience can be created that unfolds via a process of user exploration. Through the use of stereoscopic virtual reality, this thesis project will draw upon the postmodern ideas of simulation and hyperreality providing a foundation upon which the intersection of the real and game worlds for hardcore gamers can be explored.

1. Introduction

“Sitting in the audience I could almost feel the lunch bag in my lap, and I experienced the generosity of the moment almost personally because I was so physically grounded in the boy’s surrounding.”

Janet Murray, *Hamlet on the Holodeck*

There is a gulf in the understanding that casual and non-gamers have of hardcore gamers. Stereotypically hardcore gamers are portrayed as one dimensional, socially inept individuals whose entire lives are devoted to the games they play. Not easily addressed is this gulf in understanding. How can an experience be tailored in such a way that addresses this gulf? *wanted:Guild* aims to answer that question through the medium of an interactive documentary within stereoscopic virtual reality through the exploration of the lives of hardcore gamers; focusing on their intertwined real and virtual lives.

The affordances of stereoscopic virtual reality suggest a host of possibilities for interactive narrative storytelling. Among these affordances is the ability of virtual reality to ground the participant as a “physical” part of the narrative world. The very act of dimensionality brings the experience closer to the viewer. Here parallels must be drawn between stereoscopic movies and an interactive stereoscopic world within a head-mounted display. The difference between the two comes down to a matter of choice. Murray, reflecting on a stereoscopic movie, writes that the virtual environment suggests interesting vantages and points that she wishes she could explore- but as a slave to the cinematic process she must sit passively as the director decides the pathways and directions a stereoscopic movie takes.[1, .p 47] Within head mounted display (HMD) of the Oculus Rift (OR) used in this project, the user has the option

of exploring and seeking; it is a level of freedom that does not exist within the confines of a stereoscopic movie experience.

The hyperreal nature of the virtual world creates an environment that invites exploration. As Murray puts it “three dimensional photography has put me in a virtual space and has thereby awakened my desire to move through it autonomously, to walk away from the camera and discover the world on my own.” [1, .p 47-48] The engendered sense of exploration and a desire to experience the dimensional environment is what separates Murray’s passive experiences with stereoscopic video from stereoscopic HMD systems, like the OR.

In Murray’s view, the “more realized the immersive environment, the more active we want to be within it.” [1, .p 126] If actions within the environment bring “tangible results” users experience a sense of agency- “the satisfying power to take meaningful action.” [1, .p 126] Murray further defines agency by stating that the action of moving a joystick or a mouse is not agency- “activity alone is not agency.” [1, .p 128] If an effect happens because of the result of chance then there is no agency. Of her forms of agency Murray defines something she terms specifically as “spatial navigation” [1, .p 129] or the ability to move unhindered through a virtual landscape. This act of exploration can be its own form of pleasure.

In placing the narrative within virtual reality, an analogue can be created for the environment that hardcore gamers inhabit. The act of exploring the virtual world results in spatial navigation and environmental discovery. Each act of discovery within the virtual world leads to another element of the overarching story, a form that borrows heavily from the realm of hypertext literature. As with hypertext the narrative does not necessarily come in chronological order; a system that Joyce explored in *Afternoon*. Each audience member is encouraged to craft their own subjective interpretation of events, which changes based on what other parts of the narrative they

uncover throughout their exploration.

wanted:Guild creates a non-chronological narrative augmented, by spatial exploration within a virtual environment. It uses simulation to anchor the narrative, the lives of hardcore gamers, within virtual reality. The virtual environment draws upon Murray's views of the stereoscopic environment's engendered sense of spatial exploration. Since the narrative is non-chronological, it can be approached from multiple angles borrowing from hypertext fiction and the idea of the personal subject narrative. In placing the narrative in stereoscopic HMD instead of a screen or projection, *wanted:Guild* draws upon the immersion of virtual reality to create an experience that mirrors, for the audience, the world that hardcore gamers inhabit.

The following chapters will provide a deeper overview of the theoretical framework behind this thesis with an exploration of past and current work. Chapter two explores the theoretical framework that this thesis builds upon and from the prior work it draws inspiration. The third chapter explores the motivation behind the thesis; its importance and contains a possible walkthrough. Chapter four explores the design, narrative and interaction rationale behind the choices made in this thesis. Finally, the fifth chapter covers the audience feedback, current limitations and possible future extensions of this thesis.

2. Theoretical Framework

“Things need not have happened to be true. Tales and dreams are the shadow-truths that will endure when mere facts are dust and ashes, and forgot.”

Neil Gaiman, *The Sandman #19, A Midsummer Night’s Dream*

Dream, Lord of Dreams and personification of all tales and stories, gives this answer to King Oberon and Queen Titania when they comment that the play being performed never happened in real life. For Dream, who is a creature of the immaterial and the unreal, there is more truth to be found in story and tale than in facts and events. In Dream’s view facts fade over time as, history becomes stories and eventually legend. In this sense “tales and dreams” ultimately have more staying power and more impact than reality. Once the dust of reality has settled and faded only the dream remains. Dreams and games are both sides of the same coin; for what are games but waking dreams? For the hardcore gamer, their avatar and their actions within the game are as real as their actions within the real world. The game is their waking dream; their simulation. It is, to borrow Gaiman’s words, their shadow-truth.

2.1 Hyperreality: Between Reality and Game

The waking dream of the game plays a large part in the lives of hardcore gamers. Simulation is a large part of any gaming experience — but it holds a slightly higher importance for hardcore gamers. In Baudrillard’s eyes simulations are copies and copies of copies. The digital creates a world of copies without limit. It is within this world of simulation that we find the hyperreal — the real that is more than real. The internet allows for this. One only needs to search for pornography online to discover a tantalizing world of sex and seduction catering to every conceivable fantasy. Or by

exploring the labyrinthine depths of Amazon.com discover a store teeming with such a varied selection of merchandise that could not possibly exist as a brick and mortar location in physical reality.

Simulation, to Baudrillard, is the replacement all reality and meaning within contemporary society with symbols and signs. Simulation creates a situation that reality is no longer relevant to an understanding of life. Baudrillard breaks down his idea of simulation into four distinct stages. The first is a faithful copy, a “reflection of a profound reality” of the object. Baudrillard terms this stage the “sacramental order.” The second is a perversion of the reality that masks the connection to the true objective reality that it is copying. It does this so that it “masks and denatures” reality as an “evil appearance.” To Baudrillard this is the “order of maleficence.” The third stage is an absence of reality. Now the simulation pretends to be a realistic copy but instead has exaggerated or altered specific to become an arbitrary suggestion of the reality. In this stage signs and images claim to represent something real but there is no representation — only an arbitrary suggestion of relationship. To Baudrillard this is the “order of sorcery.” Here all meaning is artificial a reference to some “hermetic truth.” The fourth stage is what Baudrillard considers pure simulation in which there is no relationship to reality. Sign and symbol in this stage do not reflect on any “real” objective reality but are instead several stages removed from it and instead reference copies of copies of copies.[2]

Baudrillard associates each stage of simulation with a distinct era. The first stage is associated with the premodern period where objects were created as reproductions of some greater reality. The second stage came about during the Industrial Revolution where distinctions between real and copy break down due to mass reproduction and the evolution of objects into commodities. Finally the third and fourth stages occurred during postmodernity and Late Capitalism where the simulation precedes

the creation of the original and the lines between reality and representation disappear. Contemporary society consumes the empty signs and symbols having lost the ability to sense the distinction between the natural and the simulation.

To use an analogy the first stage of simulation is like a portrait; a faithful representation of the element it represents. The second stage is akin to an icon where some elements of the real remain but instead have become masked by the perversion of the simulation. The third stage is a crafted experience — Disneyland is a crafted experience where everything in the park is cultivated to create a pretense of a specific reality. The fourth stage can be compared to a film or a stage production. Here there is no reality or truth only pure simulation.

It is within this fourth stage of simulation that hyperreality takes hold. Hyperreality, to Baudrillard, is the point at which simulation becomes so real that it spills over into the real becoming more important and real than reality — “hyperreal.” The act of immersing oneself in a constant state of simulation further blurs the line between reality and simulation. At this point elements of the simulation appear as reality. For hardcore gamers, who find themselves immersed in their simulated game world, this spillover comes across in a variety of ways. This spillover might take the form of emotional drama within the game carrying over into the real world to the importance of virtual events taking precedence over real life events. By setting *wanted:Guild* within the confines of virtual reality we echo Baudrillard’s fourth stage of simulation. The act of donning the HMD entraps the user within a hyperreal situation that acts as a rough analogue of how the lives of hardcore gamers are a mesh of real and virtual signifiers.

Baudrillard only gives us a short perspective into how the mesh of the real and the virtual works for hardcore gamers. To understand the import of the connection between these two disparate elements, we must turn to Lyotard and his ideas on the

metanarrative.

2.2 Metanarratives

For hardcore gamers, their actions while playing their avatars, creates a personal narrative. Their avatars are living stories through which they act. These personal narratives reiterate Lyotard's ideas about the death of the metanarrative. Lyotard defines these metanarratives as the "supposedly transcendent and universal truths that underpin western civilization and that function to give that civilization objective legitimation." [3, p. 124] In Lyotard's eyes, we have given up on the grand narratives and legitimating function; the idea of country, war or socioeconomic justice. What then forms the basis of legitimization without an overarching metanarrative?

Lyotard argues that by rejecting grand narratives society has fallen back on the individual narratives. These are narratives limited in scope with clearly defined rules for understanding and behavior. By fragmenting a metanarrative into localized roles, each with its own context for judging and action, we avoid the need for metanarratives.[4] To Lyotard, each act of participation creates its own specific personal narrative. This holds especially true for hardcore gamers who must often navigate multiple personal narratives to define a space for their virtual avatars. Depending on the number of avatars or situations, a hardcore gamer can create multiple personal narratives. Actions online elicit personal, subjective narratives. These *petit récits*, for Lyotard, both corroborate and subvert the dominant metanarratives. The personal, subjective narrative plays an important role in the subversion of the master narrative or metanarrative. [5]

These multiple personal narratives are pervasive and are not limited to the online persona. Instead, some of these narratives abut into the real world the hardcore gamer inhabits. For some gamers, they are not just warriors, mages and rogues

within an online world united against impossible odds. Sometimes online camaraderie blossoms into real life friendships and in some cases relationships. Situations confined to online chat spill into the real world — two guildmates who once discussed strategy and plan of attack in an online forum might over the course of time meet in real life and discuss the same strategies and attack plans over coffee. These acts, while incomparably miniscule, wear down the barrier between what is perceived as real and virtual creating, as Baudrillard put it, hyperreality. Within this hyperreality the hardcore gamer maps out a new personal narrative. A personal narrative unhampered by concepts of reality and game — instead the hardcore gamer is as easily a hero of legend, a dragon slayer, demon banisher as easily as they are an engineer, doctor or an investment banker.

wanted:Guild creates an analogue of hyperreality punctuated by multiple personal metanarratives from hardcore gamers and places the result within a head mounted display. *wanted:Guild* is a virtual representation of the game that coexists with the real world through an interactive panorama that is representative of Baudrillard fourth order of hyperreality. *wanted:Guild* also employs representations of real world objects which act as anchors for the audience — creating a presence and an aura that brings echoes of reality within the virtual.

2.3 Place and Aura

The virtual world within the HMD creates an implicit invitation of exploration within a stereoscopic virtual space. This implicit invitation toward exploration is due in part of MacIntyre, Bolter and Gandy's idea of aura. To MacIntyre, Bolter and Gandy aura is a concept that describes the cultural and personal significance of a place (or object) for an individual.[6] Aura is a personal concept — the response of each individual to an object or place; colored by their particular experiences. Without an

awareness of place or object users are unable to experience aura. Even with a perfect simulation of an object that holds a great deal of connection the knowledge that the object is a simulation will influence the perception of the aura of the simulation.

To MacIntyre, Bolter and Gandy this connection is not simply a physicality of distance or proximity but rather defined by the user's perception of their relationship to the object or place. By employing user agency in the form of decision and interaction this sense of connection, of closeness, is increased and thus the user feels more in control and grounded within their environment.[6] This in turn increases the user's feeling of connection and aura. While this agency aids in developing the secondary connection of aura, that of a relationship between person and place or object, the first part of aura, the feeling that arises from historical, cultural and personal context, needs to be addressed. Through virtual reality, we can address this to some extent. By placing the user into a contextual environment that they are familiar with, such as a house or a room, we provide them with a sense of grounding and place. Any non-familiar elements introduced are perceived within the context of a familiar location which helps to build upon an overall aura for the experience. A familiar location also creates for the user a stabilizing influence and helps to create a situation that encourages each user to interpret events within the context of their own personal experience.

To the non-hardcore gamer, who has no background in postmodern theory, the trappings of hyperreality that Baudrillard envisions and the construction of the personal metanarrative that Lyotard speaks of are not easily understood. These concepts must first be repackaged and illustrated in a manner that is easily understood. A way in which to achieve this is through visual analogue. To this extent we borrow from McIntyres ideas of presence and aura by wrapping any hardcore gaming content within a package that suggests parallels with non-gaming experience. If given a situation

where a hardcore gamer speaks of relationships brought on through the online gaming experience, those elements can be positioned next to family photos suggesting a connection of relationship. Similarly, when hardcore gamers speak of tasks and chores within the game world we can place those elements next to visual elements that spark the ideas of work and repetitive tasks.

However a distinction must be drawn between how MacIntyre, Bolter and Gandy apply aura versus how Benjamin applies aura. Aura to Benjamin is the element of a piece of art which “withers in the age of mechanical reproduction” and that “the uniqueness of a work of art is inseparable from its being imbedded in the fabric of tradition.” [7] For Benjamin, aura is the intrinsic element of a work which cannot be reproduced or disseminated. A copy of a famous painting may be aesthetically pleasing but it does not carry the gravitas of the original work. Aura may be repurposed or changed. The aura of Macbeth on stage has the aura of the actor and the environment but watching a filmed copy of Macbeth does not carry the same aura. Instead the aura that film carries is different and instead may revolve around the cult of the actor or the elements of the cinema.

For the hardcore gamer the aura of the game as they are playing is different from the aura of a reproduction of the game. We cannot truly capture or reproduce the aura of the game as it stands for the hardcore gamer. We can however create an aura of the aura that that hardcore gamer engages in. We do this by extending MacIntyre, Bolter and Gandys idea of aura beyond the physicality of space and into the emotional content of speech and narrative.

wanted:Guild is primarily composed of interviews with hardcore gamers that the audience experiences over the course of their exploration within the virtual world. These hardcore gamers speak of their experiences with a range of emotion — happy, sad, angry, and confused among them. Regardless of the experience of the audience,

whether they are a gamer or not, these interviews are framed in the context of the emotional content each interviewee lends to their narrated experiences. To the audience who discovers a snippet of a hardcore gamer speaking of killing a particularly hard game boss the content of the story may not translate — after all how often does one destroy a dragon in everyday life? However the emotional content of the narrative, the excitement and the pride, is vocally recognizable. To the non-gamer this forms a sense of aura that they can relate back to their own personal experiences with situations that also triggered in them a feeling of pride. The interviews in *wanted:Guild* are presented as a fragmented, non-chronological experience. To the exploring audience, multiple pathways are available. This form of presentation borrows from the hypertext concept of multicursality.

2.4 Multicursality: Narrative and Choice

Multicursality is for Raley one of the “great utopian promises” of hypertext criticism. Multicursality gives the reader the ability to order information in a manner that is both quantitatively and qualitatively distinct from the page. Multicursality “participates in the stylistic, linguistic, and formal games” [8] played out in the literature of postmodernity. Raley argues that since hypertext has emerged out of postmodern fiction and uses a similar set of symbols it is not that different from postmodern fiction. Hypertext is not about itself, in a postmodern or a metafictional sense, but instead “has constituted itself around the problem of its difference.” Digital textuality has the ability to activate and manipulate the “resources and complexity entrapped within language.” [8] Within the analog medium, these spatial and temporal objects remain; it is only within the digital that they realize their potential. Hypertext works by connection and assemblage and requires the user to play an active part in its ordination.

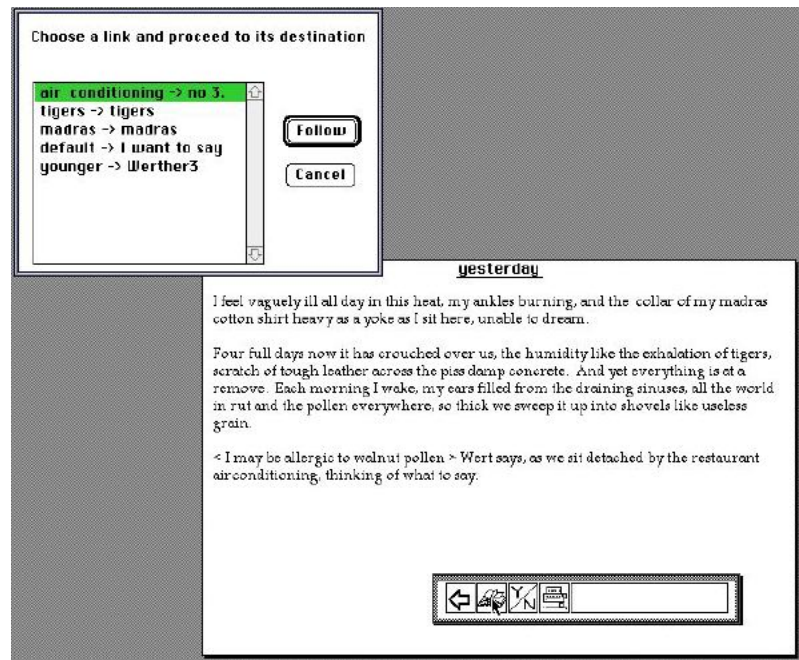


Figure 2.1: Nonchronological path selection in *Afternoon*

We see this active ordination taking place in Joyce's *Afternoon, a story*. Through his use of hypertext, Joyce mixes the chronological order of past, present and future as seen in Fig 2.1. The ability of hypertext to jump from one point to another creates a sense of confusion that does not dissipate until the reader discovers the overall pattern of the narration. Joyce, however, included a default pathway through his work providing those readers who may be courting frustration with his story structure a chronological grounding of events. Regardless of whether the reader follows their own pathway or Joyces default path through afternoon they must make an active effort to “knit” the elements they encounter together. In doing they order the chronological path of the narrative, and so reveal the story.

2.5 Reader as Author

This requirement of “knitting” is a direct outgrowth from Barthe’s idea of the Author. Barthes argues against the “Author” as an authoritative end; that an understanding of the definite meaning behind the work cannot be truly established. The individual views of each reader, their historical context, religion, emotion, politics all work together to create different interpretations of the Author’s work. To Barthe each piece of writing contains multiple meanings the text being “a tissue of citations, resulting from a thousand sources of culture.” The meaning of the work then depends entirely on the impressions of the reader rather than the desires of the author with the “unity of a text...not in its origin” but instead in its “destination” or the audience for the work.[9]

Drawing on Barthe’s ideas that the views of the individual, in this case the audience, influences their view of the work dovetails into MacIntyre, Bolter and Gandy’s idea that the audience understands and connects with that which is experienced within the mirror of their previous experiences. In turn, the audience experience returns to multicursality creating multiple possible concurrent pathways through a singular work. These pathways are not necessarily the ordained pathways that the author creates but instead exist as a mix between set pathways and perceived pathways that each audience member forges through a fragmented work.

These two pathways, one set and one perceived converge and separate easily within a fragmented work. These paths can be cyclical in nature. It is possible for the user to cycle back to previous pathways they have already explored. These story paths on their own, Higgason argues, have no inherent connection or meaning. It is only with reference to other story pathways does a meaning emerge. Thus, the readers can end up following a fairly linear pathway or an extremely non-linear path. The reader and the author work together collaborating on possible forms of meaning.[10] Higgason

notes that it is not only through the direct connection of links does one understand connections between various interconnected parts; meaning can also be derived from the possible unexplored patterns.

To Barthe and Higgason reading is not mere viewing of text but an active participation in the knitting of various pathways both explored and suggested, returning power back to the reader. This negates the view of hypertext as a simple, discouraging, viewing experience; instead it becomes a complex, dynamic interplay of projected and derived meaning. To this Raley adds the ability of new technology, a term we can extend to cover virtual reality, as this thesis uses it, to “literalize, make visible, or otherwise animate themes and stylistic features of traditional writing.”[8] Within the digital the user and the system work together to define new stories beyond initial pathways laid down.

2.6 Previous Work

These pathways are not confined to the digital but instead can also be used within the real world through the medium of mixed reality. Bolter approached his mixed reality experience, *The Voices of Oakland*, with the inspiration that “[augmented reality] techniques will not move beyond specialized application...until...theories and corresponding tools [are developed].” To him the best avenue for development was to approach augmented reality as a new medium and examine it using media theory. In doing so, an understanding would be achieved of “shared cultural expectations of the intended audience.”[11] The final experience would result in more engaging and more understandable augmented reality. Participants received a global positioning tracking system and headphones that let them play dramatic readings upon visiting certain grave sites as seen in Fig 2.2. Visitors to the cemetery engaged in an experience that focused on the “historical and cultural significance of events related to the residents

of the cemetery.” [12]



Figure 2.2: A participant experiences a sense of aura and place while exploring *The Voices of Oakland*

In *Voices* Bolter et al. apply the concept of aura and place through dramatic readings involving actors who played the part of deceased individuals within the cemetery. The participant’s exploration of Oakland Cemetery and their interaction with the graves of the deceased created a strong sense of aura and place. Participants were able to immerse themselves into the lives of the deceased — almost interacting with the “ghosts” of those who had passed. Their choice of pathway also influenced the elements they interacted with and by extension the readings that they heard — a direct application of multicursality within the real world.

This thesis borrows elements of *Voices* in regards to exploration and dramatic audio narrative, though instead of creating a mixed real/virtual AR experience, it instead places the final result into a virtual stereoscopic environment. Any mixed reality experience is going to be bound by considerations of the physical space that it occupies. *Voices* was enhanced by the structure of Oakland Cemetery and its



Figure 2.3: Stenger demonstrating her HMD and handtracking for *Angels*

environs. In order that the same structural enhancement might be applied to the context of individual narratives from a virtual game — knowing that the creation of an analogue to a physically impossible game environment is challenging if not impossible within real life — we turn instead of virtual reality. Within virtual reality, we can craft environments and order elements to enhance the content of the narrative that is being uncovered in much the same way Oakland Cemetery enhanced the experience the *Voices* delivered.

This thesis is far from the first foray into using virtual reality as a means to drive the narrative and to enhance content. Stenger’s *Angels* was billed as the first “immersive virtual reality movie.” [13] Using the technology available at the time users wore high resolution HRX goggles and a VPL Dataglove as seen in Fig 2.3. *Angels* was a “choose your own adventure” in virtual reality with prescribed pathways. While users had a choice of selecting from a variety of paths, the paths were themselves, linear in nature. *Angels* is notable for being an early attempt at an interactive virtual reality narrative.

Unlike *Angels*, which relied on a simple choice between three paths at any one time, the thesis project will instead offer the user the entirety of the virtual world to explore. While *Angels* created a chronological narrative, albeit with choice at

each step to progress the story, the thesis project focuses on the creation of a non-chronological narrative one which will rely on the user discovering and interacting with varying parts of the story.

For hardcore gamers the game that they engage in, the simulation is an extension of their reality. They exist in a hyperreal blend between their real life actions and their in game achievements. Hardcore gamers engage in personal storytelling crafting a personal metanarrative around the actions of their online avatars. *wanted:Guild* creates a visual analogue for this hyperreality and places the audience in a situation where they are encouraged to create a personal narrative through exploration and discovery. It does so to not only showcase how hardcore gamers perceive the divide between reality and the game but also to place the audience within the shoes of the hardcore gamer. It encourages in the audience a presence of aura through fantastic scenarios punctuated by emotional conversations from hardcore gamers.

3. wanted:Guild

“There are things known and there are things unknown, and in between are the doors of perception.”

Aldous Huxley

3.1 Artist’s Statement: The Gamer Darkly

In my experience as a hardcore gamer, I often ran into stereotypes on who hardcore gamers were and what they did. This gulf in perception between casual or non-gamers and hardcore gamers is what inspired the creation of *wanted:Guild*. I wanted to show in a simple and visual manner how interconnected the real could and the virtual could be for the hardcore gamer. In creating *wanted:Guild* I wanted to not only show, but also place non-gamers and casual gamers into the shoes of hardcore gamers.

Games provide an escape from the real world that people find appealing. Sometimes this escape is a simple distraction — a few moments of time tending some virtual crops or matching a series of similarly colored orbs. Sometimes escape is a bit more complicated — an hour or two spent slaying opposing forces in a war torn location, a chance to be a hero during a long dungeon crawl. In some situations, this escape becomes an extension of life. To the gamer who hurries home after working an eight hour day only to log another eight or more hours playing, leveling, and questing the game has become its own contained environment. Oftentimes it ends here; the gamer wakes up the next day to go to work a little more tired than usual but still aware of the divide between the game and the real.

The exchange and evolution between the game and the real is something that most non-gamers and even most casual gamers do not understand. Nor is it something that



Figure 3.1: A glowing path illuminates the next audio node within the topic chain.

they even realize occurs. In truth this exchange is not even realized by the hardcore gamer who still prioritizes the game above all else.

Hardcore gamers present a myriad of different stories based on where they fall in the spectrum of their gaming continuum. *wanted:Guild* aims to share these stories and in doing so give non gamers and casual gamers a shift in perception and a glimpse behind the screen of hardcore gaming.

3.2 Sample Walkthrough

wanted:Guild tells its story through the choices the audience makes. Depending on their selection of audio nodes and the order in which they visit them, each audience member will experience a different story. A map of all the visible environments with color coded areas within *wanted:Guild* can be found in Appendix D.

Through interacting with the various nodes inside the apartment and the game world the audience might listen to a story of someone discussing how they attended a virtual wedding. Once a node has been interacted with it emits a glowing trail. The glowing trail, as seen in Fig.3.1, might lead the audience to another node. This node might offer more details about the events at the virtual wedding or might instead be another hardcore gamer discussing their physical real life wedding to someone they met in while playing *WoW*. That node might in turn lead them back to the original

node where instead of hearing the same initial story about the virtual wedding they might hear more about how the couple originally met in *WoW* and then finally met in real life. This time the glowing trail would point them to a different node where they might hear another *WoW* player discussing meeting their guild in real life and so on, or their interaction with the node might not produce any trails signaling an end of that particular storyline.

On the other hand another audience member, starting from a different position, might choose not to follow the suggested pathways. Instead on their first interaction with a node they might hear a hardcore gamer telling them about how they use *WoW* to control their obsessive compulsive disorder. This audience member might not find this particular story interesting, and instead they might choose another audio node. That audio node might be a different topic altogether; a different hardcore gamer complaining about coordinating a pleasing outfit for their avatar. Still not interested in this particular path they might again choose a different node. This node might instead talk to them about the misogyny a female gamer experienced within a predominantly male guild. Finally interested in this particular topic the audience might choose to follow the suggested path leading to a different node. Instead of the female gamer they might instead hear a similar tale of discrimination this time from a player battling with homophobia within their guild. Ultimately the choice of narrative lies within the hands of each audience member. The possible narrative configurations within *wanted:Guild* are as varied as the audience members who experience it.

4. Design Rationale

“This grand game of life that you think you play, in fact, plays you. To that I say... Let the games begin!”

Nefarian, *World of Warcraft*

4.1 Environment Design

Nefarian, an end player boss in *World of Warcraft*, utters those before his climactic last battle with the players. It is a battle that has been long in the making as Nefarian has manipulated people and governments in his quest for power. To Nefarian the machinations of life are as a great game one that is to savored and controlled from the sidelines. To him the ascent of the player characters up his fortress is all part and parcel of some great game where he will ultimately be the victor. He is, of course, mistaken. As in all great fantasies the darkness is overthrown.

For the hardcore gamer is not the game an extension of life and life an extension of the game? *wanted:Guild* uses its environment and the elements found within to answer this particular question. *wanted:Guild* is composed of two interconnecting parts — a virtual representation of the real world and a recreation of the game world within *World of Warcraft*. The audience can easily traverse between these two different environments in a way that is representative of how hardcore gamers move between both the real and the virtual. The world of *wanted:Guild* contains within it a variety of hidden sections and obscure visual treasures. Depending on their depth of exploration the audience might discover a hidden cave or a recessed pool.

The representation of the real world in *wanted:Guild* takes place within a house filled with minutiae and elements of everyday life as seen in Fig.4.1. The home has



Figure 4.1: A virtual representation of a real living room

two floors, and the audience can explore the living room and kitchen environment on the first floor and the bedroom environment on the second floor. Portals exist from the home environment directly into the game world- there is no barrier between the two. The house environment was chosen to represent a feeling of home and safety — presenting to audience members the idea that hardcore gamers on some level equate their lives within the game world as an extension of their home lives.

The representation of the game world uses elements directly borrowed from *World of Warcraft* with the permission of *Blizzard Entertainment*. The game world is a modified recreation of the WoW exploratory experience — the elements of which have been chosen to create as wide an experience of the various *World of Warcraft* environments as possible. The game world exists parallel to the real world within *wanted:Guild* and is composed of two distinct areas. The first of these areas is accessible from the first floor of the house and is composed of a forest environment bordering a farm. This



Figure 4.2: Through the wall into the jungle.

area in turn borders a river that separates it from a rocky and foggy area populated with dead and decaying trees. The second game area is accessible from the second floor by walking through the bedroom wall as seen in Fig.4.2. This area is a lush jungle environment that borders an ocean. Within this area, the time of day is unlike the first with the sun either rising or descending on the horizon lending the entire scenario a rather dreamlike feel.

Both the forest and the jungle areas are populated by creatures lifted from *World of Warcraft*. Pegasi and dragons flit amidst the trees, while armored turtles swim in the water. Dryads and living trees wander the shadows while mundane creatures, chickens, goats, and cows, inhabit the farm. As the audience explores the game world, they encounter a myriad variety of ambient noises that lend a feeling of life to the

game world. Like the actual *WoW* world the audience can also discern faint strains of music within the environment creating a feeling that they have entered into a realized environment separate and yet connected to the real world.

The babbling brook and chirping of birds in the trees, the crashing of waves on the beach merge with the teeming movement of virtual life. Through the blending of virtual creatures and ambient sound *wanted:Guild* creates the illusion of life behind the screen. To the audience this is no longer a stale virtual world empty and devoid of life. Instead, they see the world as hardcore gamers see it- teeming with life and mysterious possibility. Here is a world full of fantastic promise, and it is not distant or mysterious. Instead it is only a few steps away — coexisting with the mundane “real” world much in the same way that hardcore gamers perception of the game and reality coexist with each other.

4.2 Narrative Design

wanted:Guild is composed of a series of interviews with ten different hardcore gamers hailing from varied walks of life and experience. These ten gamers were selected based on their current amount of playtime within *WoW*. Some of them are ex and current hardcore raiders; defined here as raiding a minimum of 30 hours a week. Some of them do not raid but instead devote an equal amount of time, if not more, to playing *WoW*. The number of male interviewees, seven, was significantly higher than the three female interviewees. This was done in order to mirror the disparity between the sexes within a hardcore raiding environment in *WoW*. Some work was done to screen out overtly negative and overtly positive experiences. Finally, gamers were found through a variety of sources among them Twitter and previous contacts from *WoW*. By and large the majority of interviewees arrived via word of mouth — once we had spoken to a guild member they invariably recommended other guild members.

Eventually, this resulted in a network of willing participants who were then screened based on the criteria mentioned. A full list of the questions asked can be found in Appendix C.

Topic	Sample Narration
Relationships (within game)	Playing with my friends, being an officer, and supporting my friends in the guild means the world to me. It's fulfilling to me in a way that I didn't use to have.
WoW as Coping Mechanism	I have clinical OCD and my symptoms, since starting to play, have largely disappeared. I have a channel for my OCD in this game.
Chore-like Gameplay in WoW	Once you hit 90 it was like here are 5000 daily quests you can do to augment your gear and access rewards. They weren't mandatory but you want to make you're doing your part. You don't want to be the reason you're holding your raid group back. They became mandatory.

Table 4.1: A short sample of topics and associated audio node transcripts.

The interviews were conducted as casual conversations, so upon interacting with the audio nodes, the audience experiences not a formal presentation but instead a friendly conversation. Among the most important of, the questions asked was how they felt in general about the scope of their *WoW* experience and whether it was largely positive or largely negative. As an introspective question, we found that it often gave the gamer pause and required them to evaluate their experience as a whole. We also asked them about the impact *WoW* has had on their lives both positive and negative. Again this question gave some gamers pause as they struggled with categorizing the full effects their *WoW* play styles had on them. Eventually, they spoke about their relationships within and outside the *WoW*; the stress and fulfillment of raiding, the discrimination they have experienced within the game and their best and worst *WoW* memories, among other topics. A sample of the topics and hardcore gamers responses can be found in Fig.4.1 Reflecting upon their experiences they invite users into worlds filled with love, loss and learning — worlds that transcend



Figure 4.3: A comparison of different audio node locations.

the barriers of monitor and screen spilling into the real world.

These interviews are split into several non-chronological segments that share similarities in terms of topic. The non-chronological interviews, or audio nodes, are taken and placed across the world of *wanted:Guild* in areas and positions that correspond or support the subject being discussed within each of the segmented pieces. Each audio node within a topic shares a similar color with other nodes within that topic. Nodes that speak to the excitement of raiding might be bright orange while nodes dealing with depression and negativity might be a dull red.

Audio nodes are deliberately placed across the world in locations that lend a visual emphasis to their content. An audio node of a player discussing the growth of a relationship with a guild might be placed next to a wall full of images of friends and family; a visual correspondence of real life relationships and connections mirrored within the game world. Similarly, an audio node dealing negative emotions or



Figure 4.4: Left, an audio orb before being triggered (no avatar). Right, the same audio orb after being triggered.

experiences and stress might be placed in a barren and rocky area a direct contrast to an audio node expressing joy and excitement being placed in a relatively verdant location. An example of this can be seen in Fig.4.3 Here we see a blue node, a topic tied to relationships within the game, next to a shelf with images of friends and associates. The adjoining image showcases a node, associated with raiding, next to weaponry. Upon interacting with an audio node a glowing path appears that the audience can follow to the closest audio node that shares a topic with the current active node. The path will always choose a node that furthers the story or topic being told in the active node. The audience is free to follow these suggested pathways or explore freely. There is nothing lost or gained by either following or not following the pathway. As the audience explores the world of *wanted:Guild* and discovers these nodes and interacts with them portions of the narrative documentary are revealed.

There are several topics by which the audio nodes within *wanted:Guild* are split. A short sample of these topics and their locations can be viewed on Table 4.2. For a

Topic	Node Color	Location
Relationships (within game)	Sky Blue	Next to a wall filled with photos of friends and family.
Relationships (out of game)	Teal Green	Scattered all over the house environment.
WoW as Coping Mechanism	Purple	Around the kitchen leading into the first floor exterior.
Negative Raiding/Guild Experiences	Bright Red	Across the river, beside the weapons and decaying corpse
Virtual Economy	Gold	Within a cave surrounded by gold.

Table 4.2: A sample of audio topics, their colors and locations.

complete list of topics and locations, please refer to Appendix A. Using a combination of narrative content and the aura of the location in which it is found the audience can find a better understanding of the speaker through visual connections. To aid in this within each narrative node an image of a hardcore gamer’s avatar appears upon interaction, as seen in Fig.4.4, creating a facial connection to the voice the audience hears. Since the narratives are non-chronological and scattered, the scope of the audience’s exploration of the world will determine the amount of their narrative discovery.

4.3 Interaction Design

In order to create a feeling of physical interaction with the game world the audience uses the *Razer Hydra* to move a virtual representation of their real hand as seen in Fig.4.5. The audience explores *wanted:Guild* through a combination of the *Razer Hydra* and *Oculus Rift* as seen in Fig.4.6. Both these systems were cho-



Figure 4.5: The virtual hand reaching out in *wanted:Guild*



Figure 4.6: The Razer Rift (right), Oculus Hydra (left). On the left a person using the Razer Hydra and Oculus Rift.

sen to help create an immersive experience through the course of audience interaction. The *Oculus Rift* creates an experience where the audience is unable to turn away from the environment they are exploring. This visual experience is representative of the manner in which hardcore gamers are unable to turn away from the game world they inhabit.

Using the *Hydra's* motion tracking technology allows users to move their hand in real life that moves an analogous virtual representation as seen in Fig.4.6. This makes movement more natural and organic — creating an environment where the audience is not tied to a keyboard on the desk. Using this method the audience can touch and trigger audio nodes over the course of their exploration.

The *Razer Hydra* also works in tandem with the *Oculus Rift* letting users “walk” across the virtual landscape. By using a physical anchor, the *Hydra*, which affects objects within the *Rift* a sense of immersion is created that lends itself to a simple interface control. The ease of navigation and interaction are easily picked up dispelling a barrier for entry into *wanted:Guild*.

The audio nodes are truncated into several short pieces no more than 20 seconds in length. This short time span encourages users to move onward towards the next audio node creating a constant sense of activity. This is a direct contrast to existing



Figure 4.7: A quest tracking system within WoW

documentaries where the audience typically sits and listens to an extended narration of sorts. Upon triggering the audio, nodes a suggested pathway also appears leading to the next connected audio node. This pathway draws inspiration Joyce's *afternoon* and its default pathway and the way that some WoW players use quest tracking addons to point the direction toward the next quest objective as seen in Fig. 4.7. This pathway also downplays the sense of confusion that might occur with a fragmented narrative.

5. Ever On

“The Road goes ever on and on/ Out from the door where it began./ Now far ahead the Road has gone,/ Let others follow it who can!/ Let them a journey new begin,/ But I at last with weary feet/ Will turn towards the lighted inn,/ My evening-rest and sleep to meet.”

J.R.R. Tolkien, *The Return of the King*

At the end of the *The Return of the King* Bilbo Baggins, in the autumn of his age greets Frodo and company upon their return before promptly falling asleep. As Bilbo and Tolkien both knew, the Road is never ending. As Tolkien’s Road *goes* ever on, the world of the hardcore gamer is *ever on*. We have only traversed a little part of it in the creation of *wanted:Guild*. The future possibilities for interaction and the use of the *Oculus Rift* that this thesis brings up can yet be explored by others who will follow.

5.1 Audience Feedback

wanted:Guild has been displayed at Drexel’s Research Day and to various individuals to solicit anecdotal user testing. Public opinion has also been solicited from the Rift Developer Forums and from various WoW and non-WoW gamers. Feedback was collected via casual conversations with the individuals who experienced *wanted:Guild*. Through all these *wanted:Guild* has succeeded in its invitation towards interaction. In truth, the audience seems to desire more interaction from *wanted:Guild* than what is currently available. Not content with simple exploration audience members have remarked time and again that they desired the ability to open the books within the house or to taste the food left on the table in the kitchen. Audience members have

also vocalized their desire to pet the various creatures within the game world and to harvest the plants within the farm. This desire has also extended toward the ability to explore the other closed rooms within the house and to lift and reorder weapons and objects within the game world. In this sense *wanted:Guild* can yet be improved and pushed towards a more nuanced interactive experience. Various points of interaction can yet be created and placed to better give audience members a responsive and interactive environment.

The audience has also responded positively to the fragmented nature of the story. The ability towards a self-imposed explorative pacing has meshed well with the nature of the *Oculus Rift*. Different audience members react to the motion sickness that can accompany the stereoscopic nature of the Rift. The ability to move across the world at their own pace has helped mitigate this motion sickness. Without a forced need for rapid exploration differing audience members, can freely explore the world at their leisure lingering in some areas and passing quickly through others. The experience, unique to each audience member, has been remarked upon as a positive feature of *wanted:Guild*. The introduction of player avatars within the audio nodes has also helped bolster the feeling of connection and interaction within the world. The audience felt that the narration was not disembodied but embodied within the face of each avatar within the audio nodes.

The audience also found the mix of the real and virtual environments within *wanted:Guild* to be appealing. To the audience members who started off within the closed walls of the apartment only to venture out into the wide space of the game world the change between environments was striking. The *Oculus Rift* only helps to augment this striking change. Through the Rift, the audience can look up and all around them. If experienced on a flat screen, this shift of environment is nothing special. However experienced within the stereoscopic world of the *Oculus Rift* the shift

is nothing short of visceral. The *Rift's* ability to create a stereoscopic environment creates the illusion that the audience is walking across the barrier between worlds. As one audience member put it the shift between the indoor room to forest was like seeing the sky after being trapped in a cave.

5.2 Limitations

wanted:Guild has not been without its limitations. The current limitations of the technology of the *Oculus Rift* creates motion sickness within a small number of audience members. The motion sickness is due to the visual latency between the *Rift* and the computer resulting in blurred, visual feedback when the audience member turns their head. Latency might yet be solved in future generations of the *Rift* and as the technology improves. It is our hope that the newest version of the *Oculus Rift*, advertised as a high definition compliant system, will solve the latency and visual feedback issue.

The *Razer Hydra* also presents its own limitations. In order to use it, the audience member must stay relatively centered and within the “registered” field of the *Hydra's* field of detection. Deviating causes the virtual “hand” to disappear from the view of the audience. Short of anchoring the *Hydra's* detector to the gravitational center of the audience member there is no way to solve this particular issue. It is especially challenging as most users will often turn their entire bodies and move while using the *Rift*, to echo of how they would turn or move in real life, causing them to de-register from the field of detection. Future iterations of *wanted:Guild* might choose different means of motion detection. *Sixense*[14], the developers of the plugin that integrates the *Razer Hydra* with the *Oculus Rift*, is in the process of releasing their *STEM System* of motion controllers. This particular generation of motion controllers does not require field registration and so would be more compatible with the *Rift*.

Technological limitations aside *wanted:Guild* also suffers from an improbably narrow field of view. While the process and the methods of its creation are in line with the hardcore gaming and MMO fields if applied create an interactive documentary on tropical birds it would fall short. In future iterations, the possibility of using real video becomes possible. Technologies such as *Jaunt*[15] and *OVRVision*[16] offer the possibility of capturing real life video and porting it into the *Oculus Rift*.

If given the opportunity to recreate *wanted:Guild* certain aspects of the narrative, environment and interaction would be altered. Part of the reception has centered around the desire for an increased amount of interaction. With sufficient time and restructuring more interaction, could be added along with a reordering of the current locations of the audio nodes. Part of this interaction could be to place nodes within cabinets or drawers. Such interaction would have to be done carefully so that it does not become extraneous; i.e. opening a drawer for the sake of opening a drawer. Instead, it should be done to further narrative. This design also encourages a more thorough exploration of the environment other than a cursory glance at surface material. A greater number of hardcore gamers would have also been ideal. While ten is not an insignificant number given the amount of audio a larger more varied population would have presented a more rounded view of hardcore gaming.

Future iterations of could also include the placement of actual player avatars in the same way the current environments are populated by WoW creatures. The audience might not only interact with audio nodes, but also player avatars, creating an actual sense of conversation. Many parts of *wanted:Guild* can still be classified as passive — even though the narrative is only exposed via the deliberate choices of the audience. Ultimately to create a truly interactive experience that gives non gamers and casual gamers a feeling for the hardcore gaming mentality a system need to be created that is as much game as it is an interactive documentary.

5.3 Conclusion

In the creation of *wanted:Guild* we aimed to present an interactive documentary experience that invited the audience to interact with the virtual world turning them from passive watchers into active participants through exploration and discovery. Through interaction, they not only heard the stories of hardcore gamers but became as hardcore gamers via a merging of the virtual and real from which they could not turn away. We drew upon the idea of hyperreality, applying it to the way in which hardcore gamers saw their lives and giving it visual form within the environment of *wanted:Guild*. We took interviews with several hardcore gamers and drew upon the relationship between reader and author and multicursality to create a non-linear, bifurcated storyline. Taking the ideas of aura and place we associated hardcore gaming stories that the non-gamer might have found confusing with visual indicators. Through their interaction, we offered audience members a means by which to explore, listen, and hopefully discover the intertwined lives that hardcore gamers live within the real and the virtual.

wanted:Guild demonstrates that an interactive documentary is feasible and points to a direction in which to apply interaction and environment design. The future possibilities of varying methods of interactive documentary creation and presentation within the *Oculus Rift* are diverse. This interaction need not only apply to documentaries or games but might yet extend into education, research and casual everyday use. The Rift presents a new direction towards immersion that might yet influence presentation and interaction. As the hardcore gamers within *wanted:Guild* have demonstrated gaming can often have a positive effect on people and interpersonal relationships. As a civilization, we might become as hardcore gamers existing in a world that is both real and virtual, and that might not be all that bad.

Bibliography

- [1] J. Murray, *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*. Free Press, 1997.
- [2] J. Baudrillard, *Simulations*. Foreign agents series, Semiotext(e), Inc., 1983.
- [3] H. Bertens, *The Idea of the Postmodern: A History*. Taylor & Francis, 2004.
- [4] J. Lyotard, *The Postmodern Condition: A Report on Knowledge*. Theory and history of literature, University of Minnesota Press, 1984.
- [5] M. Bamberg and M. Andrews, *Considering Counter Narratives: Narrating, Resisting, Making Sense*. Studies in narrative, J. Benjamins, 2004.
- [6] B. MacIntyre, J. D. Bolter, and M. Gandy, “Presence and the aura of meaningful places,”
- [7] W. Benjamin, *The Work of Art in the Age of Mechanical Reproduction*. 1955.
- [8] R. Raley, “Reveal codes: hypertext and performance,” *Postmodern Culture*, vol. 12, no. 1, 2001.
- [9] R. Barthes, *Death of the Author in Image-Music-Text*. 1978.
- [10] R. E. Higgason, “The mystery of lust,” in *Proceedings of the fifteenth ACM conference on Hypertext and hypermedia*, pp. 28–35, ACM, 2004.
- [11] B. MacIntyre, J. D. Bolter, E. Moreno, and B. Hannigan, “Augmented reality as a new media experience,” in *Augmented Reality, 2001. Proceedings of IEEE and ACM International Symposium on*, pp. 197–206, IEEE, 2001.
- [12] S. Dow, J. Lee, C. Oezbek, B. MacIntyre, J. D. Bolter, and M. Gandy, “Exploring spatial narratives and mixed reality experiences in oakland cemetery,” in *Proceedings of the 2005 ACM SIGCHI International Conference on Advances in computer entertainment technology*, pp. 51–60, ACM, 2005.
- [13] N. Stenger, “Angels,” cited October 2013.
- [14] Sixense, “Sixense,” cited May 2014.
- [15] J. VR, “Jaunt,” cited May 2014.
- [16] L. Shinobiya.com Co., “Ovrvision,” cited May 2014.

Appendix A. Glossary of Terms

Agency

The capacity of an agent (a person or other entity) to act in a world.

Avatar

An electronic image that represents and is manipulated by a computer user (as in a computer game).

Aura

The distinctive atmosphere or quality that seems to surround and be generated by a person, thing, or place.

Gamer

A person who regularly plays multiple types of games and of multiple genres.

Hardcore Gamer

A person who regularly plays a single game for a prolonged period of time. *See Gamer.*

Head Mounted Display (HMD)

A display device, worn on the head or as part of a helmet, that has a small display optic in front of one or each eye.

Hyperreality

An inability of consciousness to distinguish reality from a simulation of reality, especially in technologically advanced postmodern societies.

Massively Multiplayer Online (MMO)

A computer game in which a large number of players can simultaneously interact in a persistent world or can potentially play against a large number of players. *See World of Warcraft.*

Metanarrative

A narrative about narratives of historical meaning, experience or knowledge, which offers a society legitimation through the anticipated completion of a master idea.

Multicursality

The ability to order information in a manner that is both quantitatively and qualitatively distinct from the page

Oculus Rift

A HMD unit created for mass distribution. See Head Mounted Display (HMD).

Raiding

A vigorous, large-scale, multi-person effort to defeat a particularly challenging encounter or game boss. *See World of Warcraft.*

Razer Hydra

A motion detection system that employs magnetometers to detect hand movement.

Role Playing Game (RPG)

A game in which a person takes on the role of another character via their avatar.

Simulation

An assumption or imitation of a particular appearance or form; the representation of the behavior or characteristics of one system through the use of another system.

Stereoscopic

A process by which two photographs of the same object taken at slightly different angles are viewed together, creating an impression of depth and solidity.

World of Warcraft

A MMORPG where player avatars engage in raiding and other in-game activities.

Appendix B. Audio Topics and Locations

Topic	Node Color	Location
Relationships (within game)	Sky Blue	Next to a wall filled with photos of friends and family.
Relationships (out of game)	Teal Green	Scattered all over the house environment.
WoW as Coping Mechanism	Purple	Around the kitchen leading into the first floor exterior.
Chore-like Gameplay in WoW	Yellow	Scattered over the farm
Negative Raiding/Guild Experiences	Bright Red	Across the river, beside the weapons and decaying corpse
Quitting Raiding	Light Purple	On the second floor pier surrounded by fishing equipment
Starting Raiding	Neon Orange	Within the bedroom on the second floor leading into the jungle
On (Not)Being a Hardcore player	Pink	Past the pier next to the beach on the second floor
Virtual Economy	Gold	Within a cave surrounded by gold and treasure
Homophobia/Misogynism	Dull Brown	In the long hallway on the second floor, cast in shadow
Best Memory	Bright Green	On the pathway from the house towards the river.
Worst Memory	Dull Orange	Just across the bridge on the first floor amidst the rocks of the far shore
Positive Influence of WoW	Deep Blue	On the shore of the river surrounded by trees and the jade dragons
Random Stories	White	On the second floor amid the flowers and bushes of the jungle trees

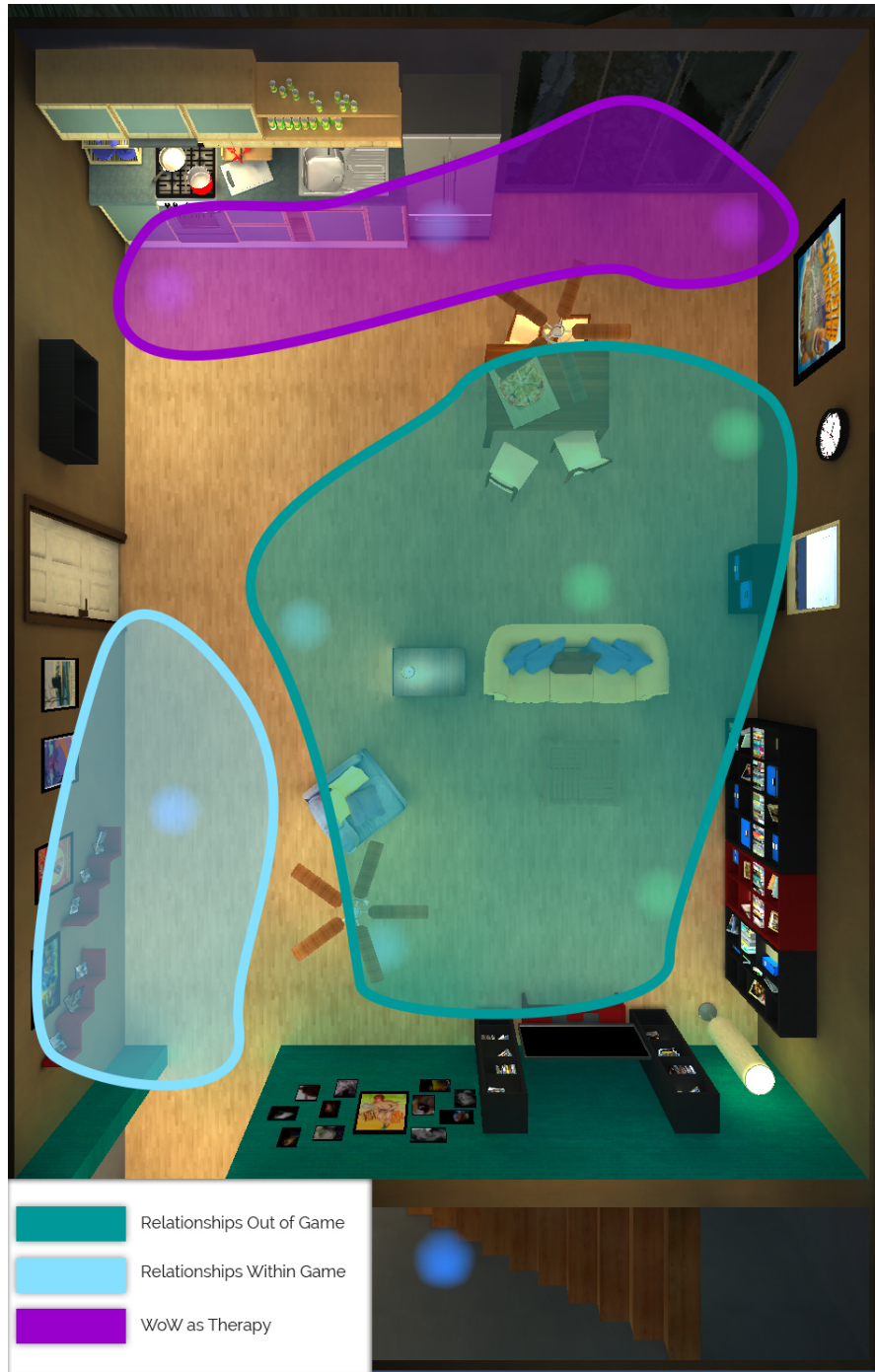
Appendix C. Sample Audio Transcripts

Topic	Sample Narration
Relationships (within game)	Playing with my friends, being an officer, and supporting my friends in the guild means the world to me. It's fulfilling to me in a way that I didn't use to have.
Relationships (out of game)	So I've met quite a few people now through a couple of different ways. I've met a ton of people some of which I've known ahead of time and planned to meet up. One of my guildies actually lives near me or close enough. And so we've actually met up...since we both work in San Francisco.
WoW as Coping Mechanism	I have clinical OCD and my symptoms, since starting to play, have largely disappeared. I have a channel for my OCD in this game.
Chore-like Gameplay in WoW	Once you hit 90 it was like here are 5000 daily quests you can do to augment your gear and access rewards. They weren't mandatory but you want to make you're doing your part. You don't want to be the reason you're holding your raid group back. They became mandatory.
Negative Raiding/Guild Experiences	And there's one fight in Orgrimmar- you have to dispel and you have to dispel fast. With six healers six should us should be able to get it. However people were not dispelling. Finally I couldn't take it anymore. I posted the logs to healer chat and said "You're being out dispelled by a warlock pet."
Quitting Raiding	The closest I've come to flat out raiding was early last year. Part of it was some of the people we had that I just didn't get along with. I was very, very stressed.
Starting Raiding	My brother's guild needed a healer. So I was like oh well why not.
On (Not)Being a Hardcore player	I have the hardcore mentality but I want to balance it with real life. I like to see the sun once in a while.
Virtual Economy	They actually worked it out as a guild that they ran the auction house. As soon as someone went against them they'd undercut right away. People complained about the monopoly and everything.
Homophobia/Misogynism	I was particularly getting tired of the server they were on. It was hostile, it was negative. I got tired of seeing faggot and gay thrown around.
Best Memory	And I got it on the one heroic boss with a coin. This amazing heroic dagger that is so unlikely to be ever be seen dropped into my bags two days before my birthday. I have never gotten so many whispers- where did you get that.
Worst Memory	On my way home I got all these texts from people. I signed on to find that the guild had all but disbanded and everyone had left within the space of twenty four hours while I was at work. It was a pretty soul crushing day.
Positive Influence of WoW	I do feel it's beneficial I don't think it's detrimental at all. We definitely have raid members that a fair enough of interaction is interacting within raid. And there's nothing wrong with that- it's not judgmental. And for those people raid is a very good thing.
Random Stories	I spend more time dressing my character in WoW than I do dressing myself.

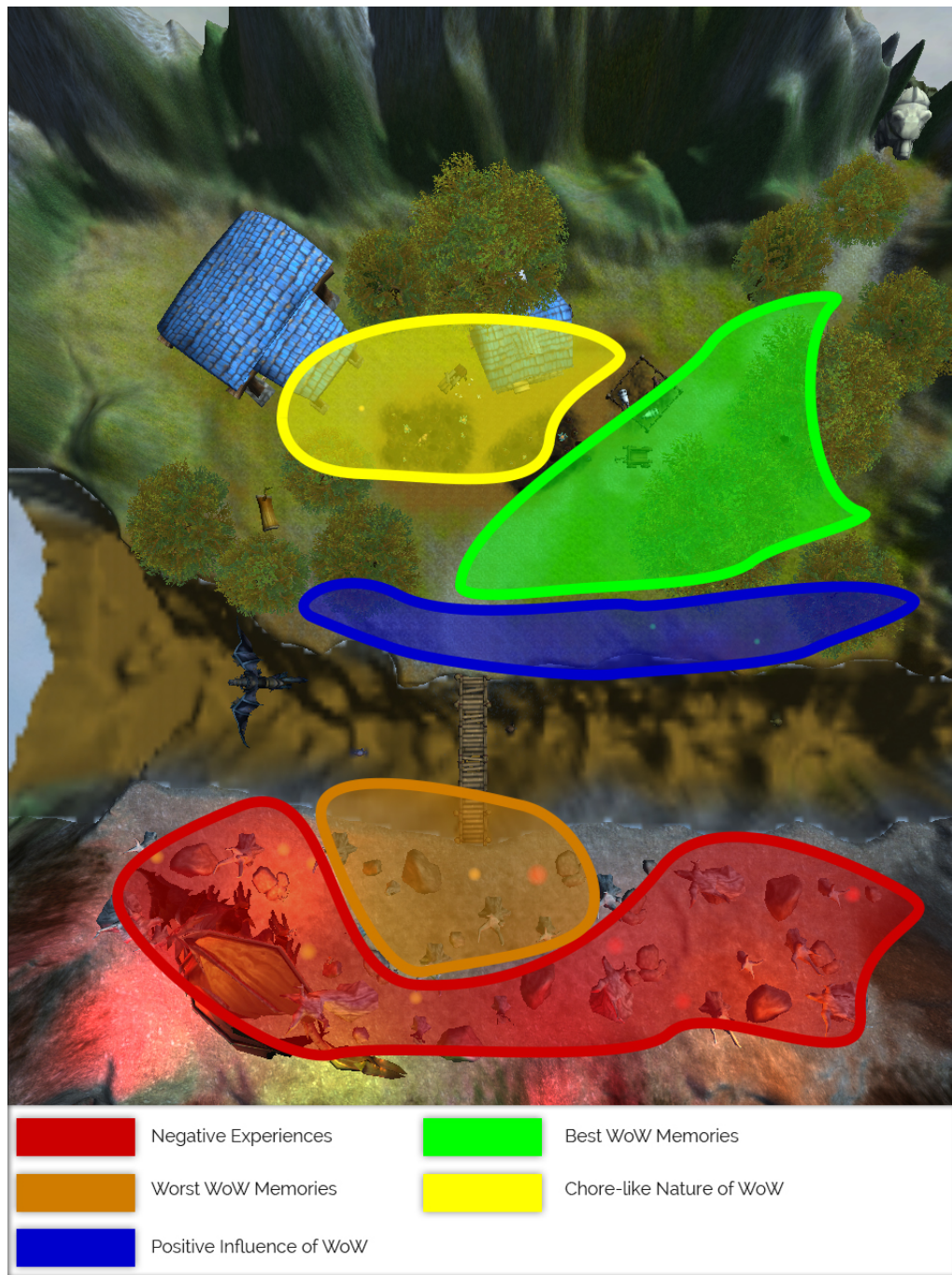
Appendix D. List of Questions

1. Who is your WoW toon? Why did you end up choosing to play that as your main?
2. How long have you been playing WoW? How did you start?
3. How would you describe your social relationships within WoW? Would you say that the people you play with are distant, as close or closer than your friends in real life?
4. What are some typical activities that you typically do on a daily basis in WoW? Why do you do them?
5. What is your best WoW memory? What about the worst?
6. Have you met any WoW players in real life? Have these meetings led to any long lasting relationships or friendships?
7. Has there been a situation where real life drama as affected your WoW time? How about the opposite?
8. Has WoW stress affected your real life? What happened? Why did it happen?
9. Do you find yourself hiding or making excuses to other friends to mask the amount of time you spend playing WoW? Can you provide an example?
10. Do you feel that disclosing your WoW activities to strangers invites some form of judgment on you? Why do you think that is?
11. Have you at any point experienced discrimination in WoW? What was the situation?
12. Why do you play WoW now? How has that changed since you started playing?
13. Would you consider yourself to be a hardcore WoW player? How would you define a hardcore WoW player?
14. Do you think WoW has a positive or negative impact on people's lives? What about in your experience?
15. Do you regret your time spent in WoW? Why or why not?

Appendix E. wanted:Guild Minimaps



An overhead view of the living with audio node areas outlined in color.



An overhead view of the first floor game area with audio node areas outlined in color.



An overhead view of the second floor game and house area with audio node areas outlined in color.

