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TAKE ME THERE: AN EXPLORATION OF NARRATIVE STRUCTURE IN VIRTUAL
REALITY

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ABSTRACT

As the market for consumer-level virtual reality (VR) experiences begins to open up, content producers aim to fill the market space with experiences best suited for the new medium. So far, the virtual reality content that has been produced fits within the definition of computer games that have been laid out by previous generations of technology. This thesis project documents the process of creating a narrative experience for virtual reality platforms to explore the storytelling capabilities of VR. Here, I have adapted H.P. Lovecraft's "The Statement of Randolph Carter" and produced a short narrative experience to be displayed to users by employing the Oculus Rift head mount display. This thesis discusses the process of creating this experience, as well as the theory of the player-protagonist spectrum that informs the content. In the future, this project may act as a jumping off point for future developers to explore narrative VR as a medium.

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Chapter 1

Claiming An Open Space

I am a graphic designer, digital artist, and little brother. The evenings of my childhood were often spent on the couch or floor, next to one of my older brothers, fidgeting with a disused controller in my hand, asking when it would be my turn to play. Those countless hours spent watching—and, rarely, playing—games, have given me an appreciation for the stories they can tell. As I have progressed through my studies, I've focused more closely on game design, but I use the term "focus" loosely. I've consumed all the knowledge I could that might one day apply to designing worlds and experiences for an audience. I've learned the basics of programming and creative writing. I've taken classes in formal film study and the theory of astrobiology. All the while, I've been honing my skills within the field, building interactive stories and experiences.

To that end, the introduction of the Oculus Rift and other head-mounted virtual reality (VR) displays into the mass market opens up new possibilities for interactive narrative. However, consumer VR is a very new and underdeveloped area of entertainment to which existing methods of storytelling do not translate directly. Relatively little is known about the specific storytelling capabilities of the quickly re-emerging medium. As virtual reality rapidly approaches a consumer audience, a successful thesis will act as a starting point for developers and researchers as they aim to generate content for and knowledge about the new medium.



Figure 1. The Oculus Rift Development Kit 1

I am now designing, writing, and building a narrative VR experience based on the H.P. Lovecraft short story “The Statement of Randolph Carter” to be presented to students and faculty at the April 27, 2015 IDS Capstone show. The final product will be a standing experience, in which the user dons an Oculus Rift Development Kit 2 (DK2), and, Xbox 360 Controller in-hand, he or she will take part in a VR adaptation of Lovecraft’s tale. In this adaptation, dubbed *The Statement*, the player acts as Randolph, the protagonist, and participates in a series of flashbacks to describe the night he lost his friend as he gives his statement to the local authorities.

The idea for the project came about when I started thinking about virtual reality as a new medium and it seemed that traditional games were taking over a new space that had much more potential. VR provides a space for games that can lean further toward the “literary” side of the Literary-Ludic spectrum, as defined by Astrid Ensslin (pp. 44). That is to say, VR allows for an experience to act more as a piece of literature, without the game-ness, or ludicity, which defines

games as things that one plays to win. In order for a virtual reality game to be enticing, it doesn't have to have much of a game to it at all. VR does the thing that only the best writers of fiction can accomplish: it, by its very nature, takes its audience to a new world, and completely surrounds them in it. This gives creators the opportunity to create "games" or experiences that are separated from the ludic mechanics that typically define them, and create interactive experiences that focus solely on narrative. The mechanic of the "game," then, is to see it through to the end, to fill the role of the protagonist of a story that is being told to you as you drive it forward.

The possibility of narrative in virtual reality is something that, so far, has been majorly overlooked. Most of the content for consumer-level VR that exists today comes in the form of short demos. Many of these act as traditional games with ludic mechanics, such as first person shooters or space combat simulators, the idea being to put the player within experiences that, largely, could exist to their full extent on a two-dimensional display. Some of these demos make it apparent that many successful game mechanics do not translate properly into a virtual reality space. Some become too intense or unnatural, making the player nauseous due to confusion in the vestibular system, a mismatch of feeling and vision that triggers "sim-sickness."

Perhaps as a response to these ludic demos, there seem to be just as many demos currently available that offer only exploration. Often these demos will provide an environment that the players are simply meant to take in. There is little in the way of gameplay to distract the players from the world they are experiencing. The entertainment comes from being transported to a new place, and observing it in wonder. I think this is fascinating, and VR is certainly the medium best suited for this type of experience, perhaps only because of its relative newness to the consumer. Being surrounded by a game world is a novel experience, and in its unfamiliarity,

it is wonderful and entertaining. There is a parallel to be drawn between the where we are now in the history of virtual reality and the early days of motion pictures. Like the legendary 1895 Lumière Brothers film, “*L'arrivée d'un train en gare de La Ciotat*” (*The Arrival of a Train at La Ciotat Station*)—a 50 second silent film of a steam engine coming toward the camera, which is said to have made audience members flee from their seats for fear of being run over—virtual reality has the ability to trick our senses in a way for which we may not yet be prepared. We are fascinated to just see it work; it needs nothing more than that.

However, the novelty may not be permanent, and, like the novelty of motion pictures, once it wears off, it opens up a space for storytelling, of which we as humans never seem to tire. In VR, we are presented with a space for telling stories that few people think of as a storytelling medium; many think of it as a game medium because that is to what it is attached, from what it evolved. But VR has so much more potential. At its most basic, it can put you inside of a world and make you feel like part of that world. There is a huge capacity for telling stories in a way that is completely novel and separate from traditional game and traditional film. A virtual reality narrative will not be something that you simply watch, or even drive forward. It is something of which you feel like a part.

Chapter 2

Conceiving the Project

My idea for the project was to create or remediate a story and revitalize it through this burgeoning medium. Virtual reality may not be entirely new but is finally reaching a place where it may soon be a significant part of consumer entertainment. VR offers a space that is separate from passive media like film, in which the audience allows the narrative to wash over them in a theater, and separate from the interactive experience of videogame narrative in which the mere participation in the story is rarely enough without the challenge of ludic mechanics. The idea is that the VR narrative experience is more akin to reading a novel, in which the extent of the interaction is to read and turn the pages when necessary. Turning the pages sometimes comes as second nature, but other times as a playful challenge, perhaps if we fear what the next page might hold. VR has the ability to put a player into a created world in a different, more literal way, as separate from the experience of an audience member watching a film or a player playing through a videogame. He or she becomes the “player-protagonist;” not only are you helping that protagonist get through that narrative, the narrative is happening all around you, happening to you. You should feel like you are participating in the story, a first-, second-, and third-person narrative.

The Player-Protagonist on a Spectrum

In my research for this project and throughout my years playing videogames, I’ve started to think about the role of the protagonist in terms of a spectrum between the Hero and the

Stranger. The Hero character is one we are all familiar with because they have names and faces we are familiar with. Examples of these might be Master Chief (*Halo* series), Nathan Drake (*Uncharted* series), Jak & Daxter (*Jak* series), and Kratos (*God of War* series). These are characters that are confident in their place in the world. We often find the camera shifts outside or in front of Heroes in cutscene to show us their faces or bodies, bringing us outside of their heads to watch them act. Their voices are strong, their opinions are made clear, they have personalities that are established for us to watch and push forward.

On the other side, there is the Stranger, which is a staple of RPGs, like *The Elder Scrolls* or the *Mass Effect* games, where the player creates the protagonist whose place in the world is plastic, and whose opinions can be created and changed by the players themselves. For this reason, strict Stranger protagonists do not tend to be used for linear narratives, but instead for the branching narratives that would naturally come about through the process of making different choices. In order to create a linear narrative with such a fluid protagonist, the writer and game designer must create narrative choke points that pull the player-protagonist back to the established narrative.

A narrative driven by a Hero falls more in line with how we think about watching a film. The narrative is laid out for us, and we are driven to play because we know an exciting story is written and we want to find out what happens next. In its furthest extreme, we are not the protagonist: we find ourselves watching the protagonist and maybe even telling him or her what to do. But he or she has his or her own personality. As a Stranger, the player is driven by the ability to create their own story, or to explore the stories of the secondary characters that they meet. They want to find a way to survive within the world that is put in front of them, learning

the story of the world as the game unfolds—perhaps finding a place in it—as witnessing a character arc from beginning to end.

In between the two extremes, narratives are told in myriad ways. Chell, of Valve's *Portal* series, falls almost completely toward the Stranger side of the spectrum. In the original game, she is without a voice or a backstory. Her face and body are only visible by using clever placement of the game's namesake portals, and her name is only accessible by viewing the game's source files and seeing how the character mesh file is named. The ludic directive of solving puzzle after puzzle drives the player almost entirely, at least at first. As a character, Chell is far from the most thoroughly defined part of the *Portal* narrative—players could probably play through the entire game without realizing that their avatar is a woman—which allows the players to use themselves to fill in the portions of Chell's character that are missing, shifting the player-protagonist relationship toward the player, making Chell more Stranger than Hero. As a player-protagonist in the *Portal* series, the player and Chell want only to survive, and for the uncover the story of the world around us and how its cast of characters interrelate.

“Jack” of 2K Games' *BioShock*, is close to Chell on the spectrum, as he lacks a voice, his name is only seen briefly in the first thirty seconds of the game, and his face and surname are only available on the passport that appears in the game files. Jack has a larger role in the narrative, though. Most non-player-characters (NPCs) interact with Jack as a Stranger, as if we are just someone who stumbled into their world, as we think he has. However, it becomes apparent as the story progresses that while much of the narrative experience comes from learning about the world to which the the player-protagonist introduced, the underwater city of Rapture, and the cast of characters that populates it, Jack's life and the actions he takes within the course of the game are particularly important to the narrative. In the beginning of the game we think of

ourselves as a Stranger happening upon Rapture, but by the end, we realize that our life as Jack is much more important than that; the story is informed by Jack's identity, even if not his personality (though that line is blurred a bit when we take into account the meta-discussion the game's ending proposes).

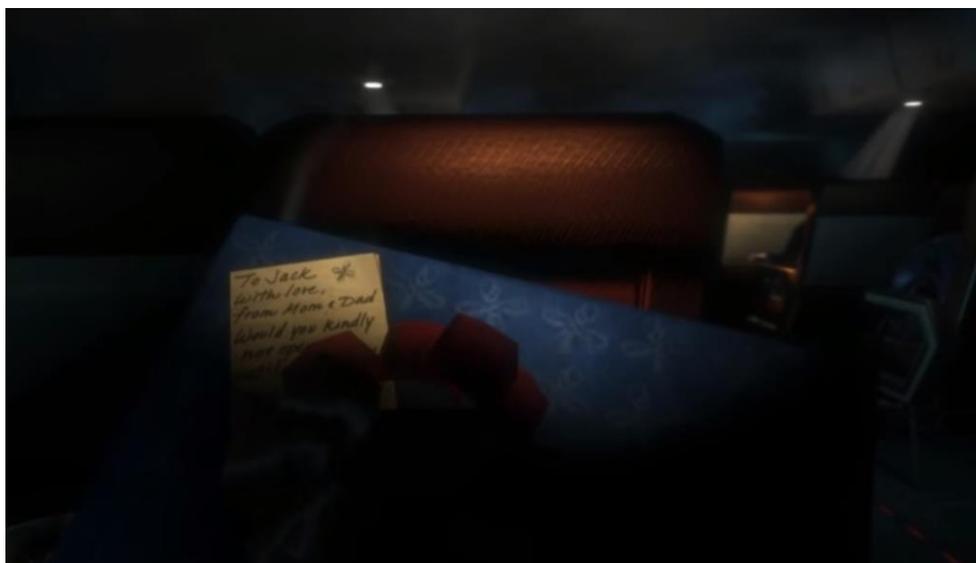


Figure 2. The only appearance of Jack's name in *BioShock*.

Gordon Freeman of Valve's *Half-Life 2*, a protagonist living in a well-developed world fighting his way through a story that seems to be happening around him, falls close to the center of the spectrum. Like a true Stranger, he is silent, and our decisions are often made for us, by either an NPC who directs us or circumstances that allow no other response. That's not to say he is without character. Without a voice, we do not get a sense of his personality or his opinions, but through our interaction with NPCs we get a sense of his previous interactions with people, what people have heard about him, and about us as the player-protagonist. His reputation follows him—and you, the player—and his place in the world is well defined. Dialogue with NPCs (though dialogue may not be the best term, as the player-protagonist never responds) lets us know how each character has come to relate to Gordon. Many characters greet us like an old

friend or a respected scientist, and we find that even without speech, the silent protagonist finds a way to move toward the Hero side of the spectrum.

Inching toward the Hero extreme, we find Booker DeWitt, of Irrational Games' *BioShock: Infinite*. Booker's life before the game is mostly unknown to the player (and, in large part to Booker, due to the temporal paradox at the center of the game's plot), but part of the joy of the narrative is filling in the pieces of his well-established backstory. While Booker is a Stranger to the flying city of Columbia, he is no stranger to the violence and ugliness that lie within, which becomes apparent very quickly. He is an ex-Pinkerton, the historic precursor to the U.S. Secret service, and it is clear that his actions in the line of duty haunt the player protagonist throughout the game. Booker is aware of the ugliness of his past, which is sympathetic to the player, who is likely a veteran of game violence, but is still made uncomfortable by the extent of the violence and the ugliness of the racism and other social afflictions present within Columbia. Booker, as distinct from the characters placed on the spectrum above, speaks. His relationships to characters, his opinions, and his history often come right from his mouth and, by extension, from the player's point of view. *BioShock: Infinite* is very much the story of Booker DeWitt, but in playing, we the players find that it is still the story of us as Booker, offering a bit more of the protagonist to the player protagonist spectrum.

Finally, the Hero(es) to a far extreme: Joel and Ellie of Naughty Dog's *The Last of Us*. Highly regarded for its poignant narrative and infamous for making players cry before the end of the prologue, *The Last of Us* is a feat of interactive story telling. Its protagonists, both of whom the player controls, fall about as far toward Hero on the spectrum as a game might be willing to go. Joel's and Ellie's backstories are apparent early on, and their relationship develops in front of the player, as he or she plays through the game. In a way, though, the player feels detached from

the protagonists because of how far toward the Hero they fall. Interaction often takes place in cinematic cutscenes and combat, at times, takes the form of quick-time events, which prompt the player with buttons to press instead of using the established game controls. The cutscenes, while incredibly well done, serve to remind the player that he or she is not the protagonists, and is merely guiding them.

While *The Last of Us* succeeds in telling a lovely story in its own medium, it is here in the spectrum where the idea of the player-protagonist essentially breaks down in VR. While the player might be content watching the events of a Hero's story play out, in order to feel the effects of the story as not only the audience but the protagonist as well, I propose that there needs to be an element of the Stranger in the protagonist.

Narrative Inspiration

As a little brother, the story arc of a game has, out of necessity, become the most important part of games for me. My older brothers were always the ones playing, and I had to learn to be content with watching. I can still remember being transfixed by my oldest brother's playthrough of *The Jungle Book* videogame we had for the Sega Genesis, though I don't remember if I ever gave the game a try myself. It wasn't too long before I was pestering my brothers, asking them if they would play more so I could find out what happens in *The Legend of Zelda* or *Jet Force Gemini*. Sure, there were times that I was allowed to play, but I learned to love games without being any good at them. Without playing, it was easy to start to think of them as works of fiction.

My first experience with a strictly narrative game is a game called *Dear Esther* by the Chinese Room studio. In *Dear Esther*, you play as a nameless protagonist exploring an island, and at certain locations on the island different excerpts from a letter are read to the player. Through playing, you get a sense of the story of Esther and her death and how it has affected you as the player protagonist. But, the player doesn't have an active role in having the story be told other than unlocking these excerpts of an already finished narrative which is being retold to you.

Another inspiration to me was *BioShock: Infinite*, developed by Irrational Games and published 2K Games studios in 2013. This is one of the most complex and wonderful narratives that I have ever played through. I was so affected by the story, not only in its complexity and the richness of the world of which it is a part, but also because of the active role of the player-protagonist, Booker DeWitt. Booker, like the player, is thrown into a set of circumstances and, while confident in the skills it takes to get through the game, he is a stranger to this world. But, as we, the player, get acclimated to the world, so does Booker. We also hear Booker's voice, which is strong, confident, and opinionated. He is heavily characterized but we still identify with him because we are never taken "out" of Booker; the player and Booker occupy the same place. We stay behind Booker's eyes and the story happens around us, to us, and because of us. So while this game is excessively violent, a fantasy shooter that belongs in the category of AAA first person shooters, it nails storytelling and the idea of the player-protagonist so perfectly that I was inspired to make a game almost as if Booker DeWitt never learned how to shoot a gun.

Chapter 3

Adapting the Script

Choosing Source Material

When creating this project, the first step was obviously choosing the source material. I had my eye out for, above all else, a protagonist who was caught in his circumstances and whose choices were agreeable, but almost made for him, as the opposite would have lent itself to a branching narrative, which was not the focus for this project. His ideas should be understandable so that the player will more easily take on the role of the player protagonist without fighting against it. I also wanted the source material to be a simple story with few characters, if only for a more concise and compact final product.

In my reading, I reread “The Statement of Randolph Carter,” by H.P Lovecraft. In the story, Randolph Carter is a young man giving his statement to police officers as he’s reporting an incident during which his mentor, Harley Warren, a man studying the occult, has gone missing. He gives the details of the night and describes his relationship with Warren. During this incident he seems to be tugged along by Warren, who is a friend, but also an authority figure, and brought into an intense and scary situation, which leads to Warren’s death at the hands of an unseen monster. So, as I was choosing source material, this story became a favorite. In its simplicity and intensity I was able to picture a narrative experience in which the player takes the place of Randolph retelling his story and remembering in flashback the night of his friend’s death.

In Randolph I had a protagonist with a voice. His actions are reasonable and although, in the story, the relationship between he and Warren is not described in detail, it is clear he has

reason enough to follow Warren. However, he is a kind of Stranger to Warren's realm, tugged along into this world, just as we the readers—or the players—are. When it came to writing my adaptation, that is what I wanted to focus on. I wanted to make sure that Randolph was relatable and that if we take his place we can understand his position.

Creating the Scenes

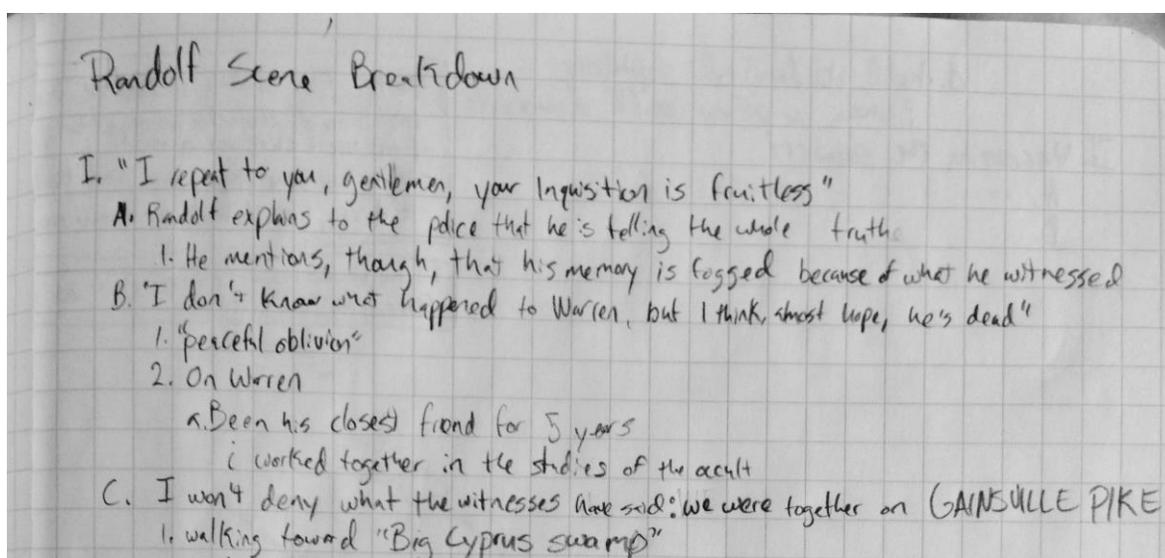


Figure 3. The original scene breakdown for "Randolph" (working title)

Before I started to write, I read and re-read Lovecraft's story. I started to take notes on the scenes that Randolph described. I wanted to figure out which were important, and which beats I needed to make sure I hit. As the notes started to get excessive, I realized that I was beginning to write a sort of screenplay. So I began to write just after that.

I wanted to hit the right mark when recreating the Randolph character. At first I had thought that a Stranger as a player-protagonist would be the best course of action, as it would allow the player to put him or herself in Randolph's role more readily, but after creating the scene breakdown, I realized Randolph needed to be a vocal protagonist. That is what is in the source

material, and that is what makes the most sense. Any adaptation of “The Statement of Randolph Carter” needs a vocal protagonist, because that is how the entire story is laid out, and that is what makes it successful. So, in order to tell the story that I needed to tell, I decided that I needed to create a protagonist who ekes toward the Hero end of the spectrum. I wanted Randolph to be a round character, but one who is pulled into the story so that we could be too. I pictured him at Booker DeWitt’s spot on the protagonist spectrum.

The first step of making Randolph’s position relatable was writing the library scene. This scene doesn’t appear in the original source material, though it’s alluded to that Randolph works with Warren reading old texts and translating them. It was important for me to include this scene to establish to the player’s and Randolph’s connection to Warren which, in the story, is written out verbally and plainly stated, but we don’t get an example of their relationship before the night of Warren’s death. I thought it was important, though, for the player to connect with Warren, even just briefly, in order for the intensity of the climax to hit on a more emotional level. Also from a game-making standpoint, this gives me the opportunity to introduce the “action button” mechanic to new players so as not to break up the narrative later on and give the player a relaxed environment to become more acclimated to the world.

Realizing the necessity of a narrative through line, I wrote the character of the Officer next. His lines are implied within the source material, though in Lovecraft’s original story, only Randolph speaks to a faceless, nameless, voiceless officer. I think in order for the player to feel connected to Randolph, he needed someone to talk to, someone asking for him to tell his story. In order to feel that they are playing as Randolph, not just playing through his actions, he needed to be asked to go on and asked to clarify, so that perhaps the player feels as though they’re discovering the story from within their own memory. The officer also helps place Randolph

within the world. His story does not take place in a vacuum, he is telling it to another person, asserting that it did happen. And though his memory is faulty, we as the player can assume that Randolph has no reason not to tell the truth as he knows it.

The final portion of the script was written after a short hiatus from writing, as I was stumped by the ending of the source material. The story ends in the middle of Randolph's telling of it, at the climax. The effect in writing is powerful, but I did not want the narrative that I was creating to feel unfinished, and at the same time I still wanted to do Lovecraft's original work justice, so I put off writing the ending until I thought hard about why the ending is powerful the way it is written. The final words of the story are "YOU FOOL. WARREN IS DEAD," spoken by the monstrous disembodied voice that Randolph describes in the last paragraph of the story. I needed to think about why this is a powerful ending and how to mitigate it with the fact that while the story begins as Randolph's retelling to a police officer, it ends very much in the world of the story he tells, which in literature or in writing is very easy to reconcile, but when trying to put the player within Randolph to play as him, there needed to be a place to come back to keep them from feeling disconnected.

Finally, the idea came to me to end the story just as it had in the source material, but in the blackout of the credits, I would use the concerned officers voice to let the player know that something had happened to Randolph as he was retelling the story. The blackout and credits you were experiencing indicate a blackout on Randolph's part, which allows for the ending to, instead of feeling cut short, to feel more powerful and affecting.

So, now that I had the very ending to work toward, I could put in the events leading towards death and the climax. Knowing that I could use the ending within the source material, which I found to be affecting, I felt comfortable adapting the scene right from Lovecraft's story.

The dialogue is much the same, though updated a bit to fit within a more modern time period and a little more concise, to keep the flow of conversation more natural as it plays out in front of you, as opposed to reading out from a page. But, otherwise, I tried to keep from reinventing the wheel and did my best not to question Lovecraft's tried and true storytelling.

Chapter 4

Building The Experience

When I set out to build *The Statement*, two game engines were front-runners for DIY virtual reality game building. Oculus supported Unity, who offered their game engine for free with a personal use license and Unreal Engine, who had at the beginning of this academic year, announced a program for free academic licenses. I had previously created games in Unity and became quite familiar with it, but I was never pleased with how the personal version handled graphical elements and the paid version was prohibitively expensive.

So I decided that I wanted to take this opportunity of building a thesis project from scratch to learn to use Unreal Engine 4 as virtual reality programs developed within its environment seemed to achieve the most realism. So, I set out to create a proof virtual reality experience by modeling and designing an environment based on the Nickelodeon show *Avatar: The Last Airbender*. The environment in the TV show was creative and fantastic and provided me an opportunity to work with an already-designed environment that I could use to learn the basics of putting together an environment for virtual reality in Unreal Engine 4.

The process became much more extensive than I had originally thought it would. Though the models were fairly uncomplicated, I realized the importance of creating high quality UV maps. These maps were used not only to display textures and materials but also in Unreal Engine, are used for calculating shadow and light information. This was something with which I was previously unfamiliar, as the games that I had developed in Unity did not require, either because of their design or because of the capabilities of the game engine itself, any sort of

extensive UV mapping. Once I brought the UVs to a satisfactory level, however, I found that applying even pre-made materials to my meshes in the Unreal environment brought with it its own set of challenges, as I had to learn the Blueprint visual scripting language, unique to Unreal Engine. In order to edit these materials, I had to become familiar with this new language and it was proving extremely difficult. Though I was happy with the proof I had created, I was starting to see that it might have been naïve of me to consider learning a new game-making environment trivial.



Figure 4. My Unreal Engine 4 proof, The Western Air Temple

At the end of the fall 2014 semester, I aimed to present a prototype scene to faculty running on the Rift. In the interest of time, I built the scene using primitive meshes in Unity, along with models that I had found offered for free online. The prototype was to be a small taste of a possible aesthetic and a programming proof of concept. While successful in the latter, I was once again disappointed with Unity's available graphics and felt that, while difficult to work with, I had to learn to use Unreal Engine in order to bring the aesthetic quality of *The Statement* to a level with which I could be content. I expected to be able to design my assets in Maya and bring

them into Unreal Engine and translate my prototype code from the Unity prototype into Blueprints, failing to foresee any major problems.



Figure 5. Fall 2014 prototype, using primitive shapes and Unity 4.

As I moved forward the project, I began to make low-poly meshes in Maya, making sure to keep the computational cost low enough for the stereo rendering that is required for virtual reality. I was wary of any drops in frame rate that may occur from over-complicated scenery, which is known to cause discomfort and sim-sickness for VR users. The aesthetic decisions that I made during this process were far less technically organized. I would often look for images to inspire me and work toward those, expecting a coherent style to come about by way of being the work of a single person working toward a fixed goal. This may not be a professional workflow, but for a DIY game like this, it seems to have worked out with no small amount of luck.

After I had a scene's worth of meshes, I worked at populating a scene in Unreal Engine. I used materials that I had downloaded from Unreal's marketplace to texture the meshes, and I was struck by the realism that professionally made materials and Unreal's lighting algorithms could

achieve. Unfortunately, it also struck me that this level of realism would be difficult to mimic as a one-man development team, and I began to rethink the possibility of using realistic materials and meshes in my environments. Around this time, I also decided to try my hand at programming in Unreal with the Blueprints system, and after hours and hours of struggling to put together a demo with a small fraction of the scripting that went into my fall 2014 demo, I realized that I needed to rethink and reconsider the necessity of working in Unreal Engine.

Luckily, as it happened, Unity executives decided to release a much more complete personal edition with the new version of Unity, Unity 5, meaning that with Unity's free personal license, I wouldn't have to sacrifice graphical quality for familiarity with the software environment and the ease of scripting that went along with using Unity. Switching from the still-unfamiliar Unreal Engine to Unity made it much easier to envision a finished product meeting the deadline.

Now feeling more comfortable with the engine, I was able to think a bit more creatively when creating assets. After reading reviews of different virtual reality experiences provided by Oculus and a new contender in the consumer VR field, Valve, who at the time had just announced their partnership with HTC and their plans to bring their own virtual reality headset to market, it seemed to be unanimous that high graphical fidelity had nothing to do with the feeling of presence offered by high quality virtual reality. Much the opposite, a player's mind would often readily accept that it was part of a cartoony world. This inspired me to create a different aesthetic for the flashback sequences of *The Statement*. A more painterly aesthetic for the textures, along with the low poly meshes that I had already created gives the product a more distinctive thumbprint. The hand-painted textures allow me to put myself into each object

without fearing that it might break the user's immersion or create a lackluster experience. On the contrary, I think it gives *The Statement* its own distinct personality; my own distinct personality.

Chapter 5

Conclusions

As the project approaches completion, I'm able to evaluate the successes and failures of the methodology of my approach, as well as the impact of the overall product. As a first attempt at a narrative virtual reality experience, I think *The Statement* is overall successful, and a valid example of a narrative-based experience that successfully eschews ludicity in favor of a more literary narrative approach. I think it proves that a player can have an emotional experience like that of a short film or story while occupying the role of the protagonist without the need for ludic mechanics to keep his or her attention. By giving a player the opportunity to feel they are physically occupying a space, the narrative indeed can be a centerpiece for a game to the point where the word "game" may be insufficient.

One of the parts of the project that I'm most proud of is the script. I think I achieved my goal of making a good adaptation of Lovecraft's plot; it successfully translates the work into the new medium, turning a single character's monologue into a multi-character experience full of dialogue and different settings. I also feel that I was able to expand on plot points in order to create a fuller experience than simply one man's formal statement might be. I was also able to add further character development in *The Statement* with natural dialogue that gave personality to the characters and allowed for colorful readings that were made true to the cadence of natural speech.

In Randolph's character, I think I successfully put him in a good position in the player-protagonist spectrum. By allowing Randolph to explain his story I am able to introduce the player

into the world that he or she will inhabit, but in playing as Randolph, they also get the chance to experience a new sort of world that neither the player nor the protagonist are familiar with. By sharing the novelty of that experience, it further unifies the player with Randolph as the player-protagonist. Randolph is also meant to have sympathetic motivations: his dialogue and the choices he makes are checked and within reason, which allows the player to agree with the stance that Randolph takes and allow themselves to be a willing participant in the narrative.

I'm perhaps most proud in the script with my ability to remediate the ending from Lovecraft's original short story. I was able to take Lovecraft's powerful, final line and use it to create an ending that properly translates to the virtual reality medium. The single-line "punch line" ending is something that seems to work best in short fiction. I did not believe it would translate well because it would leave the player in a disconnect, as it would be much more obvious that the story ended in a flashback and not quite understanding what happened to the protagonist in the narrative present. However, by using the credit sequence as an epilogue, I was able to maintain Lovecraft's ending as a true ending, yet still bring the player back to the narrative present using a device only found in visual media. This is perhaps my proudest example of remediation and overcoming the obstacles of translation literary media into narrative VR.

I think the project is technically successful, as well, especially from the perspective of a solo developer. Although I created all the visuals, I think the experience still meets a high standard. I realized early on that there would be obstacles with regard to time and manpower, compromising any high-detailed realism that I aimed to achieve. So, by setting a lateral goal, instead of aiming for realism, aiming for a consistent style with each of the assets, I was able to create a cohesive and consistent aesthetic. The threads of my personal style weave through the

entire piece, and although it by no means feels like a replacement to reality, I've designed a world that is entirely signature to me. The simple, low-poly style that I used throughout the piece also has the added benefit of being computationally cheap, something that is very important because of the high processing demands of virtual reality. The sort of lateral thinking that went along with creating a visual style that would allow me to effectively complete each aspect of the piece made me realize the importance of developing realistic goals, with regard to time management, manpower, and hardware limitations.

All that said, I feel like there are many places in which I could improve *The Statement*. First of all, that tonally it could have been a little bit more true to Lovecraft's original work. As a writer Lovecraft is known to be dark, frightening, and intellectual. Along with monsters and demons, he deals often with unreliable narrators and notions of insanity, which are perhaps more frightening than the creatures he creates. With that in mind, I think that *The Statement* is a tonal departure from Lovecraft's work, and I lost a little bit of the emotional pull that first inspired me. The notion of an unreliable narrator is hinted at, as Warren never appears as a human, but instead as a cloud of jasmine colored smoke. He never takes shape as Randolph's memory can never quite fill in his physical features, which is perhaps the piece of the work that best represents Randolph's own uncertainty within his statement and places within the narrative a question of the nature of memory. I think this aspect could have been more of a centerpiece in the work. Just like much of Lovecraft's work, the inconsistency of recollection is a fairly terrifying aspect of the human experience, and I think that by introducing elements of this inconsistency into the piece, I might be able to recapture that notion and be more true to the great author.

I also feel that a contributing factor to this tonal inconsistency was the voice acting. I hadn't anticipated directing voice actors or casting. I was lucky enough to be given the

opportunity, but I feel that given infinite resources, I would have taken more care in this process. Voice acting is central to the presentation of a narrative VR experience like this, especially with characters with no visual animation (such as the Officer). The voice actors did a wonderful job given their experience and my own experience as a director. Though they were true to my writing, in the subtleties of their speech they were not necessarily the characters I had imagined. While writing I had pictured a much more straightforward and perhaps even dark reading of each of the characters, which would be more true to the tone of Lovecraft's work. However, in their own readings the actors developed their own profile for the characters, which deviated slightly from my own vision and the original work. While to fresh ears these speech patterns may in fact be subtle enough to not change the emotional draw of the story, dialogue is such an important aspect of the overall piece, that it deserved closer attention. If I had taken the time to sit down with each actor and discuss with him the role of each character within the narrative, I think it could have been closer to my original vision.

During my pre-production process, I had thought that the proper way to execute this was to create a scene breakdown and develop a visual setup for the scene, but I realized early on how important writing each line of dialogue would be to the narrative and subsequently the final product. The importance of this narrative can't be understated in this medium and in a project with the goals that *The Statement* had. As a narrative virtual reality experience, the speech and actions of the characters outweighs any expert lighting or minute visual detail, as they drive the story along for the player protagonist to experience. Just like a Shakespearean performance can be successful within a black box, a narrative VR experience should be able to be successful with the performances of its actors and only the most basic assets and controls. In the future, I realize I need to approach narrative VR from a narrative first prospective. While the user's experience is

absolutely important, greater care needs to be taken in presenting the story, the characters, and their dialogue in a convincing, affecting, and cohesive way.

That is not to say that the visual experience should be ignored, nor is it saying that the experience I created is without fault. Though I think I successfully used the medium of VR by creating scenes that played with the player's notion of scale and personal space, (starting in a cramped interrogation room, moving to a spacious personal library, and finally ending in an exterior natural area in front of a tree that appeared larger than life), I think that by simply filling in the world with more assets, I would be able to inject some life into the scenery and allow the player to feel as though they are truly Randolph taking part in this story. In Warren's study especially, I would like to add more props, effectively telling a sort of personal history of Warren's through the things he keeps around him. However, these sorts of knick-knacks are each a small project on their own and were unfortunately low priority in this process. Moving forward, however, I would like to continually add to his library and allow for the character as Randolph to learn a little bit more about the man he is following by simply observing the books and trinkets that he owns. In this way, I would be able to further Warren's character development outside of the scripted writing and better utilize VR as an interactive medium without distracting from the core narrative. The swamp as well could feel like a more natural environment with organic debris and perhaps animated wildlife.

Animation too, could be utilized more through the piece as only inanimate objects are given their own animations in *The Statement's* current state. However, I think that the project could benefit from an animated avatar for Randolph with gesticulating hands to indicate his emotional state and perhaps allow the player to feel that he or she as Randolph exists more in the world. Ideally, in the future I will be able to animate each of the characters in order to create a

more distinct personality for each and allow the player-protagonist's connection to flourish. I also feel that with a larger team I might be able to add things such as non-diegetic music in order to heighten the emotional stakes of the experience moment by moment.

As it stands right now, I plan to share *The Statement* first and foremost with the burgeoning community of virtual reality developers through the Oculus VR's developer forum Oculus Share. This website gives me the ability to upload my project and receive feedback such as specific user comments, overall quality rating, and VR comfort rating. It may also give the piece the exposure it needs to get funding for further development. Once I begin to gather feedback, I will be able to administer more specific changes to the piece and continually alter and update it until it is ready to be shared with a larger community. Ultimately I would hope to share this with the gaming community at large, through the Steam Greenlight process. I also plan to show this project not only at the IDS thesis review show, but also at the Playcrafting NYC conference in the summer of 2015, in order to share the process with other small teams of developers. I think that the game development community could benefit from discussion of the process of making *The Statement*, as it serves as a proof of concept. It demonstrates that VR does not have to be an extended game space, but can indeed exist as a space all its own. A narrative VR experience like *The Statement* proves that the storytelling capabilities of the medium are distinct from those that already take up a large portion of the market space such as film, games, and literature. However, it is important to note that the role of the protagonist in narrative VR as the player and the protagonist should be able to be unified in order to create an emotionally resonant experience.

Overall, I feel that the piece is successful in its execution. I look forward to its reception, as the feedback I receive will inform my process as I plan to take *The Statement* to larger and

larger audience. Ultimately I hope it stands as an early example of narrative VR, and provides future developers with an example of a successful experience that provides a narrative within a created world in lieu of traditional ludic mechanics as a means of entertaining a player. The role of the player-protagonist will surely be further explored as will the impact of a protagonist's place on the Stranger-Hero spectrum.

Appendix A

"The Statement" Script

INT. POLICE INTERROGATION ROOM - EVENING

A harsh, square room, with concrete floor and cinderblock walls. A single door lies opposite of a desk. Over the desk, a single light hangs.

RANDOLF is seated at a desk, handcuffed and pleading to a camera with a red "record" light blinking on a tripod in front of him. He has been provided with a cup of coffee, now empty.

RANDOLF

I don't know what more you want me to say.

OFFICER 1 is unseen, presumably watching camera feed of Randolph. Officer 1 clicks in. He is a younger man, but by no means a rookie. His accent is a testament to growing up in the the Florida Everglades.

OFFICER 1

(over intercom)

Just go through it one more time, Mr. Carter. But let's get all of it this time.

RANDOLF

I'm telling you this is everything I remember.

OFFICER 1

(exasperated)

Okay then, Randy, what happened to Harley Warren.

RANDOLF

I don't know! I mean--god--he's dead, I guess--I hope.

(A pause)

"Peaceful oblivion," he called it.

OFFICER 1

He said this to you walking down
the Pike?

RANDOLF

No, no. It's something he always
says. I mean when you work with the
shit he studies it helps to have a
poetic attitude about all of it...
but yeah, yes, as far as I remember
we took the Gainesville Pike toward
Big Cyprus Swamp. We must have had
some tools, too. I don't know.

OFFICER 1

Let's jog your memory. Tell me
about Warren.

RANDOLF

Like what? You mean what he looks
like? I don't know. Tallish. Male.
His face was...uh..I mean he had,
brown hair, right? Um-

OFFICER 1

You said you worked 5 years under
this guy. You're on record saying
he's your closest friend. You don't
remember what he looks like?

RANDOLF

I don't know!...Fuck, I'm
shell-shocked, I guess. I don't
know what you want me to say. You
don't just see something like that
and come away with everything in
working order! I told you, my
memory is shaky. It's really
fuckin' shaky.

OFFICER 1

Alright, Randy, alright. Why don't
you tell us what you can about him.

RANDOLF

(A sigh and a pause. He reflects before he continues)
 ...Jasmine. He was always drinking jasmine tea at his desk. It reminded him of his time in the Orient. There was a cloud of that smell that always followed him...

The room begins to change. The walls and desk fall away and are quickly replaced by WARREN's study. A softly lit room full of trinkets and book-cases and tables overflowing with literature of all types. Books, pages, scrolls, and stone tablets. A fire crackles in a fireplace.

INT. WARREN'S STUDY - AFTERNOON

WARREN is depicted as a cloud of white smoke with flecks of yellow "sitting" at a desk. He's an odd man, and worldly to the point of being esoteric. He often "reaches" down and takes a sip of tea from an antique tea-set.

WARREN

Randolf, I need *Hametim Hachaim*
 [The living dead in hebrew]. Go to the table and grab it for me.

Randolf goes to the table, but hesitates to pick anything up.

RANDOLF

Uh... remind me what it looks like.

WARREN

The covers got something of an iris atropurpurea hue. It's very old. Randolf takes a guess and picks a blue book.

WARREN

No no. Iris atropurpurea. We saw them at the cemetery in Norfolk last year. It's a deep red.

RANDOLF

Ohhh.

Randolf goes and gets another Book. Old and red.

WARREN

No no. Not that one! That's Greek.
It's a more coagulated red. A wound
6 or 8 hours post-mortem.

RANDOLF

(Mimicking Warren)

Ah yes!

WARREN

Careful now, I can head right back
over to the linguistics department
and give this PhD to someone who
does a more flattering impression.

RANDOLF

Yeah but they won't keep you on
your toes like me.

Randolf goes and picks up a dark red book with Hebrew
writing on it.

WARREN

Ah! That's it! Bring it here!

Randolf walks the book over. Warren examines it fervently.

WARREN

Thank you, Randolf. You may go
back to your translating. Let me
know if you find any connection
between *The Serpent and the
Rainbow* and that text on the
Maduxwane.

RANDOLF

I'm not sure I can help you much
with the Venda.

WARREN

Context clues, Carter! I'd help you
but I believe we're on the verge of
something. This book ought to point
us in our final direction.

RANDOLF

The coagulated one?

WARREN

Yes, Randolph, the coagulated one.
"Hametim Hachaim."

OFFICER 1

I'm sorry can you spell that?

The scenery changes suddenly. The interrogation room flies back into place.

INT. POLICE INTERROGATION ROOM - EVENING

RANDOLF

What?

OFFICER 1

Hame-what? The book.

RANDOLF

It's Hebrew. Or Arabic maybe. I never translated those languages. It was one of the one's he'd collected to prove his "Theory of the non-degenerative corpse." It's the book that pointed us to Big Cyprus.

OFFICER 1

A Hebrew book pointed you the Everglades?

RANDOLF

Well, yeah. Not right to *this* swamp, but this one happened to be close by, and the chemistry worked. Something about the vapor and air content. I don't know.

OFFICER 1

You don't know? Seems a little strange you would follow this guy out there without asking some basic questions.

RANDOLF

Yeah but you sort of learn how Warren operates, and you don't question it.

OFFICER 1

Would you say you were afraid of Dr. Warren? Did he ever scare you?

RANDOLF

(Quickly, almost interrupting)
Oh no not like that. It's just that a question might get in the way of his thought process. Slow him down. It wasn't worth it.

OFFICER 1

It wasn't worth what?

RANDOLF

Knocking him off track. He's an affable guy, but the closer he gets to solving something, the more he needs his space. By the time we made our way to Big Cypress, the only times I caught him out of his own head were telling me to keep up.

The Interrogation Room walls fall away and reveal a NIGHT sky over HIGHWAY lined with CYPRESS trees. Warren's jasmine cloud calls from a break in the guard rails
Randolf Follows Warren into the swamp. His lantern and glowing spectre leads Randolph through a small maze of thigh deep swamp, and tall Cypress trees, their knees making traversing difficult.

Soon, they come to a break in the trees. In the middle of the clearing there is a small, muddy landmass. On one side, a cypress tree much larger than the others in the swamp. Surrounding the mass are the spikey "knees" of the tree, seemingly helping it keep it's shape. There are viney plants and brambles on the island, overtaking a rocky tomb made of stone slabs.

Warren pauses, then starts toward it.

EXT. BIG CYPRESS SWAMP - MIDNIGHT

WARREN

What are you doing, Randolph?
Quickly, it's just over here.

RANDOLF

Coming!

IF: Randolph walks too far from the opening he encounters a dense fog and is unable to continue.

WARREN

Randolf, come on!

IF: Randolph takes longer, or heads down the road the other way.

OFFICER 1

So you didn't follow Warren in?

RANDOLF

No, no, I did.

OFFICER 1

Then don't get off track.

WARREN

Randolf!!

RANDOLF

Do you think you can help me carry
some of this?

It's now apparent that Randolph is carrying a duffel bag.

RANDOLF

I can take the lantern for a
little.

WARREN

(Distant and annoyed)
I have the spades, which are no
small weight. Besides you have no
idea where we're going.

RANDOLF

(Mostly to himself)

Well, if you would tell me--(I could...)

WARREN

Just bear with me. Not much longer now.

They approach the stone tomb. Wordlessly, Warren consults the text he brought with him, a book with indecipherable symbols. Calmly, he sets the book down, clears his throat and struggles to move the slab, grunting with effort.

IF: the player takes too long to help:

WARREN

(Breathlessly, but calm)
A little help would be appreciated.

RANDOLF

(Faraway, with a hint of fear in his voice)
Yeah. Yeah of course.

The two of them manage to pull the slab off of the tomb. A hiss of gas releases from the tomb. The slab hits the ground with a loud thud. Warren and Randolph pant for a bit gathering their breath.

WARREN

I'm sorry to have to ask you to stay on the surface.

RANDOLF

What?

I'm sorry but I can't let you go down there. Even from what you've read for me and what I've told you, you're not prepared for what I plan to encounter. It's fiendish--

RANDOLF

(Trying to interrupt)
What? You're not just gonna-

WARREN

(Continuing over him, asserting himself a little louder)

--work, Randolph, and without ironclad sensibilities you would risk your life and your sanity. I don't wish to offend you, and heaven knows I'd be glad enough to have you with me; but the responsibility is in a certain sense mine. Keep your two-way on. I promise to keep you informed of every move.

(Brightening)

Just for the love of god don't shut me off!

Randolf forces a nervous chuckle.

WARREN

Right. Well.

With that, Warren turns and descends into the tomb. Echo-y footsteps fade out of earshot, leaving Randolph in the eery quiet of the swamp. After a beat, Warren calls in from the Walkie talkie.

WARREN

("In a shaky whisper more portentous than the loudest shriek")

God! If you could see what I'm seeing.

The noise from the tomb grows a bit louder
Silence.

WARREN

Randolf, it's
terrible--monstrous--unbelievable

RANDOLF

Warren, what is it? What is it?

WARREN

I can't--it's utterly beyond thought. It's--oh god. I never dreamed of THIS!

RANDOLF

Warren, Warren god damn it what do you see.

RANDOLF

(Frantic)

Warren? Warren, what do you see?
Warren??

Nothing until:

WARREN

Randolf! for the love of god, put back the slab and get out of this if you can! Leave everything else! Just go!

RANDOLF

Warren. Warren I'm not going to leave you! Warren tell me what you see!

WARREN

Get the fuck out of here! For God's sake, put back the slab and get out!

IF: The player tries to move the slab. It wavers but barely budges.

Randolf braces himself

RANDOLF

Warren, get ready! I'm coming down!

WARREN

("Scream of utter despair")
Don't! You can't understand! It's too late--my own fault! Put back slab, there's nothing else to do!
(softer)

Quick. Before it's too late.

RANDOLF

Warren, I can't. I can't just--

WARREN

(whispering)
Randolf hurry--It's no use. Better
one then two--the slab--.

A pause. Some radio clicks and static.

WARREN
Nearly over now--you're losing
time--cover up the damn thing!
(Swelling into a scream)
What are these th--legions--my god!
Get out!! Get out!!

Radio silence.

RANDOLF
(Terrified)
Warren?? Warren? Warren are you
there?? Answer me!

Then a disembodied VOICE fills Randolf's ears.

CREDITS

VOICE
("deep, hollow, gelatinous,
remote, unearthly, inhuman")
YOU FOOL, WARREN IS DEAD!

On "dead" cut to black. White credits scroll in front of the
viewer. Officer 1's voice is heard on the intercom.

OFFICER 1
Mr. Carter? Mr. Carter? Oh shi-

The intercom cuts out. The sound of a door opening and
footsteps. Officer 1's voice is heard without intercom
distortion for the first time.

OFFICER 1
Mr. Carter? Randy? Oh god. Mr.
Carter.

Sound Fades.
End.

Appendix B

Example Source Code: Library Game Manager

```

public var holdObject : GameObject;
public var fpc : GameObject;
public var blueBook: GameObject;
public var redBook: GameObject;
public var rightBook: GameObject;
public var indicatorCube: GameObject;
public var blueBookDest : GameObject;
public var redBookDest : GameObject;
public var rightBookDest: GameObject;

var rayLength : float = 1.0;
var hit : RaycastHit;
public var cam : Camera;
public var holdingObject: boolean;
public var holdingBlue: boolean;
public var holdingRed: boolean;
public var holdingRight: boolean;
public var blueBookDelivered : boolean;
public var redBookDelivered : boolean;
public var rightBookDelivered : boolean;

public var handObject : GameObject;

public var inWarrensArea : boolean;
public var inTranslateArea : boolean;

//Sound Files
public var wGrabItFile : AudioClip;
public var wIrisFile : AudioClip;
public var wDeepRedFile : AudioClip;
public var wGreekCoagFile : AudioClip;
public var wCarefulFile : AudioClip;
public var wBringItFile : AudioClip;
public var wThanksFile : AudioClip;
public var wLetMeKnowFile : AudioClip;
public var wContextCluesFile : AudioClip;
public var wYesCoagFile : AudioClip;

public var rRemindMeFile : AudioClip;
public var rAhYesFile : AudioClip;
public var rCoagulatedOneFile : AudioClip;
public var rMhmFile : AudioClip;
public var rOhhFile : AudioClip;
public var rVendaShakeyFile : AudioClip;

//Warren's Lines
public var wGrabIt : GameObject;
public var wIris : GameObject;
public var wDeepRed : GameObject;
public var wGreekCoag : GameObject;
public var wCareful : GameObject;
public var wBringIt : GameObject;
public var wThanks : GameObject;
public var wLetMeKnow : GameObject;
public var wContextClues : GameObject;
public var wYesCoag : GameObject;

//Randolf's Lines
public var rRemindMe : GameObject;
public var rAhYes : GameObject;
public var rCoagulatedOne : GameObject;
public var rMhm : GameObject;
public var rOhh : GameObject;
public var rVendaShakey : GameObject;

//Line Said Markers
public var wGrabItSaid : boolean;
public var wIrisSaid : boolean;

```

```

public var wDeepRedSaid : boolean;
public var wGreekCoagSaid : boolean;
public var wCarefulSaid : boolean;
public var wBringItSaid : boolean;
public var wThanksSaid : boolean;
public var wLetMeKnowSaid : boolean;
public var wContextCluesSaid : boolean;
public var wYesCoagSaid : boolean;

public var rRemindMeSaid : boolean;
public var rAhYesSaid : boolean;
public var rCoagulatedOneSaid : boolean;
public var rMhmSaid : boolean;
public var rOhhSaid : boolean;
public var rVendaShakeySaid : boolean;

public var sayAction : boolean;

function Start () {
}

function Update () {
    if (holdingObject){
        handObject.transform.position = holdObject.transform.position;
        handObject.transform.rotation = holdObject.transform.rotation;
    }

    if (holdingBlue && inWarrensArea){
        print("In Warren's Area w/ book");
        if(Input.GetMouseButtonDown(0)) {

            handObject.transform.position = blueBookDest.transform.position;
            handObject.transform.rotation = blueBookDest.transform.rotation;
            holdingObject = false;
            holdingBlue = false;
            blueBookDelivered = true;

        }
    }

    if (holdingRed && inWarrensArea){
        print("In Warren's Area w/ book");
        if(Input.GetMouseButtonDown(0)) {

            handObject.transform.position = redBookDest.transform.position;
            handObject.transform.rotation = redBookDest.transform.rotation;
            holdingObject = false;
            holdingRed = false;
            redBookDelivered = true;

        }
    }

    if (holdingRight && inWarrensArea){
        print("In Warren's Area w/ book");
        if(Input.GetMouseButtonDown(0)) {

            handObject.transform.position = rightBookDest.transform.position;
            handObject.transform.rotation = rightBookDest.transform.rotation;
            holdingObject = false;
            holdingRight = false;
            rightBookDelivered = true;
            wThanks.SetActive(true);
            wThanksSaid = true;

        }
    }

    if (Physics.Raycast(cam.transform.position, cam.transform.forward, hit, rayLength, 1<<0)){
        if (wIrisSaid){
            if (hit.transform.tag == "BlueBook"){
                if(Input.GetMouseButtonDown(0)) {
                    PickupObject(blueBook);
                    holdingObject = true;
                    holdingBlue = true;

                }
            }
        }
        if (wDeepRedSaid){
            if (hit.transform.tag == "RedBook"){
                if(Input.GetMouseButtonDown(0)) {
                    PickupObject(redBook);
                }
            }
        }
    }
}

```

```

        holdingObject = true;
        holdingRed = true;
    }
}
}
if (wCarefulSaid){
    if (hit.transform.tag == "RightBook"){
        if(Input.GetMouseButtonDown(0))
            PickupObject(rightBook);
        holdingObject = true;
        holdingRight = true;
        wBringIt.SetActive(true);
    }
}
}

if (sayAction){
    GrabItLines();
}
if (blueBookDelivered){
    DeepRedLines();
}
if (redBookDelivered){
    GreekLines();
}
if (wThanksSaid && inTranslateArea){
    TranslateLines();
}
}
}

function GrabItLines() {
    wGrabIt.SetActive(true);
    yield WaitForSeconds (wGrabItFile.length);
    rRemindMe.SetActive(true);
    yield WaitForSeconds (rRemindMeFile.length);
    wIris.SetActive(true);
    yield WaitForSeconds (wIrisFile.length);
    wIrisSaid = true;
}

function DeepRedLines() {
    wDeepRed.SetActive(true);
    yield WaitForSeconds (wDeepRedFile.length);
    wDeepRedSaid = true;
    rOhh.SetActive(true);
}

function GreekLines() {
    wGreekCoag.SetActive(true);
    yield WaitForSeconds (wGreekCoagFile.length);
    rAhYes.SetActive(true);
    yield WaitForSeconds (rAhYesFile.length);
    wCareful.SetActive(true);
    yield WaitForSeconds (wCarefulFile.length);
    wCarefulSaid = true;
    rMhm.SetActive(true);
}

function TranslateLines() {
    wLetMeKnow.SetActive(true);
    yield WaitForSeconds (wLetMeKnowFile.length);
    rVendaShakey.SetActive(true);
    yield WaitForSeconds (rVendaShakeyFile.length);
    wContextClues.SetActive(true);
    yield WaitForSeconds (wContextCluesFile.length);
    rCoagulatedOne.SetActive(true);
    yield WaitForSeconds (rCoagulatedOneFile.length);
    wYesCoag.SetActive(true);
    yield WaitForSeconds (wYesCoagFile.length);
    wYesCoagSaid = true;
}

function PickupObject(targetObject: GameObject) {
    if (!holdingObject){
        handObject = targetObject;
        //targetObject.transform.rotation = holdObject.transform.rotation;
    }
}
}

```

```
function CheckWarrensArea(isThere : boolean){  
    inWarrensArea = isThere;  
}  
  
function CheckTranslateArea(isThere : boolean){  
    inTranslateArea = isThere;  
}
```

BIBLIOGRAPHY

BioShock. Irrational Games, 2K Games. 2007. Video game.

BioShock: Infinite. Irrational Games, 2K Games. 2013. Video game.

Dear Esther. The Chinese Room. 2012. Video game.

Ensslin, Astrid. *Literary Gaming*. Cambridge, MA: The MIT Press, 2014. Print.

Half Life 2. Valve Corporation. 2004. Video game.

The Last of Us. Naughty Dog. 2013. Video game.

Lovecraft, H.P.. "The Statement of Randolph Carter." *The Call of Cthulhu and Other Weird Stories*. Ed. S.T. Joshi. New York, NY: Penguin Books, 1999. 7-13. Print.

Portal. Valve Corporation. 2007. Video game.

ACADEMIC VITAE

David R.S. Palumbo

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EDUCATION

The Pennsylvania State University (Schreyer Honors College)

Spring 2015

B.Design – Honors in Interdisciplinary Digital Studio (IDS)

DESIGN EXPERIENCE

Penn State Dance Marathon (THON)

May 2014 – March 2015

Graphic Design Captain

- Acted as a one of two captains in charge of a majority of the year's branding and promotional efforts
- Designed the THON 2015 Corporate Packet, a folder containing informational materials, sent to thousands of corporations, foundations and small businesses to solicit donations and communicate THON's mission
- Worked to increase awareness, attendance, and donation results by creating dozens of flyers and social media graphics to promote events and promotions
- Created motion graphics for THON's Entertainment committee to increase the professionalism of THON videos and further integrate 2015 branding efforts started with the Corporate Packet
- Developed styles and laid out multiple specific pages for THON.org's coming major aesthetic update
- Communicated with THON volunteers from across the volunteer network as well as professional groups such as the New Jersey Devils and Yankee Stadium to fulfill media requests and keep THON's imagery consistent

SEALab/Applied Research Laboratory (ARL) at Penn State

Designer

- Rebranded multiple departments and projects within the ARL by redesigning all logos, creating a unique identity for each department while maintaining cohesiveness between departments.
- Produced UI elements including buttons, color schemes, and iconography relating to the rebranding of the TAP system, to be used primarily by United States Navy for strategic purposes
- Communicated with department heads and project managers both directly and remotely to successfully produce the desired look and feel for new logos and rebrands through multiple iterations and new ideas
- Updated website banners and assets with new artwork for select departments with renders composed and lit in the Autodesk Maya environment, later finalized in Adobe Photoshop

SDS Design Associates

Artist/Plotter Operator

- Designed over a hundred collegiate and commercial decals and magnets to be sold in retail outlets by using combinations of artistic and technical development software: Illustrator, Photoshop, and Gerber Composer
- Created new lines of merchandise for multiple institutions by implementing techniques geared toward mass appeal, resulting in exceptional sales of these new designs
- Worked with clients, discussing and refining their original abstract ideas for products and artwork until the client received the desired result
- Cooperated with representatives of universities and colleges nationwide to bring quality custom artwork to a diverse clientele, ultimately perpetuating and generating patronage
- Operated a Graphtec plotter with a combination of Adobe Illustrator and Graphtec software to begin the physical assembly line process, and completed additional manual tasks before product shipment