Student Number
KC42059

Virtual Space
Assignment 01
1,498 Words

CONTEXTUAL ANALYSIS

Proposed by:

Jordie Bowen

This Document
A contextual justification for the proposed virtual space MDVR

Created
23.03.16

Notice of Plagiarism
The ideas expressed in this documents are that of my own, any outsourced material has been referenced appropriately.

SpringAwakening**VR**

The 2007 hit Broadway musical
by Duncan Sheik and
Steven Sater

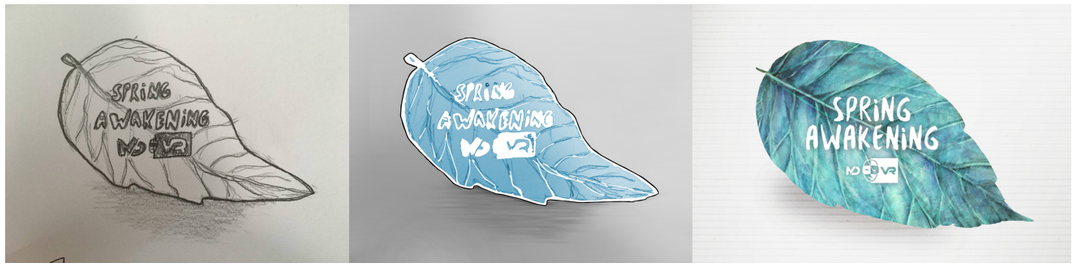
INTRODUCTION

For this iteration of MDVR (Musical Director Virtual Reality) I will be focusing on the musical Spring Awakening, a modern rock musical set in 1891 Germany. This program creates a space that is intended to be replicated in real life, because of this, the design needs to imitate real life as much as possible, ZeroLight Studio CEO Darren Jobling states that “Most non-game VR experiences will demand complete authenticity of the environment and objects that are being engaged with – this means an absolute attention to detail of things like geometry, textures, motion & physics and lighting” (Chapple). Using Unreal Engine 4 I intend to recreate design practices that are used in both theatre and film rather than solely rely on game engine practices, this will include creating lights that reflect off other surfaces, creating sound that is directional, and using motion capture to animate real-life choreography.

LOGO

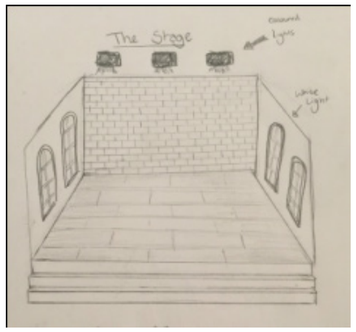
By looking at the original logo design it seems to be heavily inspired by rock bands of the time, when the musical hit Broadway in 2007 bands such as Foo Fighters and Linkin Park stormed the US Billboard charts, nearly 10 years later in 2016 these bands don’t get a lot of radio time.

I took inspiration from more recent indie bands such as Bastille, Foals and Arcade Fire to rebrand the show for MDVR, this new design illustrates the shows departure from stage to VR.

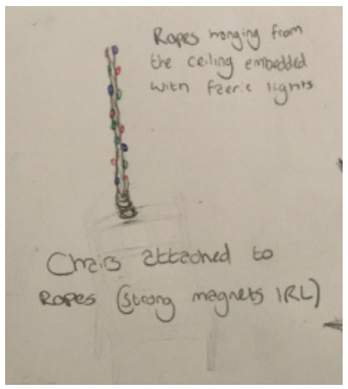


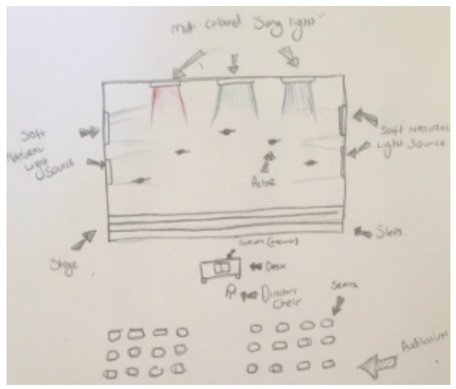
SET DESIGN

The set design is inspired by the original broadway production and has been adapted for smaller performance spaces. The back wall will be textured with brick and adorned with paintings and photographs from late 19th century Germany, whilst the sides will be a lighter colour with two ‘church windows’ either side.



The church windows act as soft white lights shining through a translucent white gauze. The floor is wooden laminate and has steps going up to the stage, because this design caters to smaller stages that may not have sufficient wing space it incorporates a system in which the chairs are attached to ropes hanging from the ceiling.



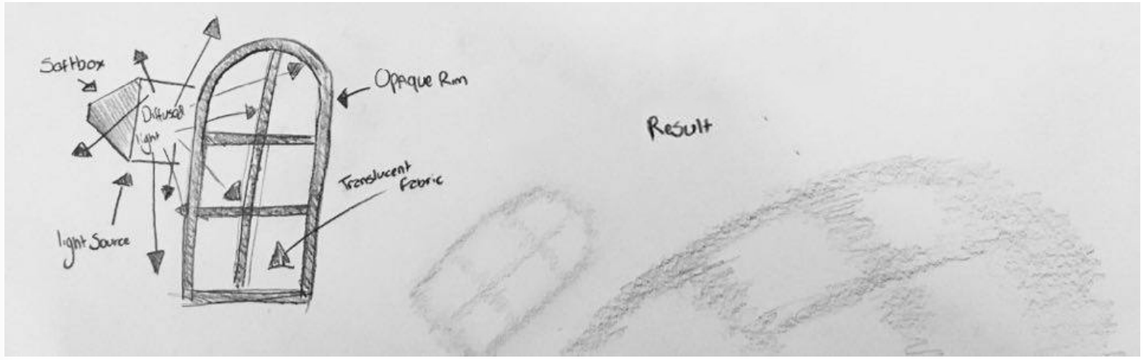


WHY SOFTBOX?

The themes in Spring Awakening revolve around the juxtaposition of modern day rock music and an overly religious setting in a very rigid 1890’s Germany. One of the main uses for a softbox is to mimic the soft light from a north-facing window, according to Jeffery Luhn, a contributing instructor for PhotoflexLightingSchool.com, “Early photographers realized the beauty of north light and virtually every photo studio from 1850 through 1930 had a room with a large window for shooting portraits.” so this type of lighting would have been usedpredominantly in the time of Spring Awakening (Luhn).

SOFT LIGHTING

To create soft lighting I will imitate the way in which a softbox works in photography whilst combing it with gobo lighting, a sort of stencil that is placed over a spotlight to create a design on a given surface. By bouncing light in a softbox we can create soft diffuse light, it allows to light only a select area without flooding the scene (photokonnexion.com). First of all I will start with a box, combined with a spotlight, this will bounce against the walls in the box in many different directions through the translucent material in the “windows” on either side of the stage. The windows act as a gobo and in turn will create both light and shadow to cast an eerie church atmosphere over the scene, this will contrast greatly when the scene shifts to the modern “song light”.



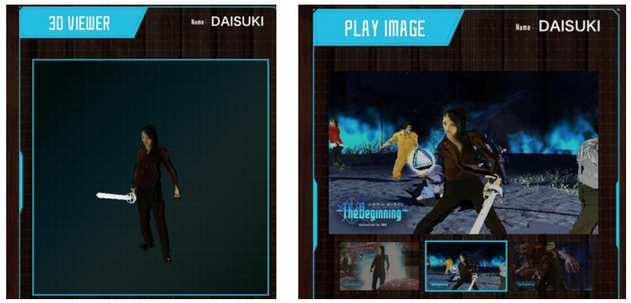
Both gobo lighting and diffuse softbox lighting have been used in film and stage for varying different effects, during the filming of The Addams Family, the chief lighting technician would applied gaffer tape to the lights to shine a light on Morticia's eyes, a nod to early 20th century romanticism film making (romeoshootsphotos.com). Gobo lighting is also used in stage to give a sense of place, by combining these two types of lighting I hope to achieve an effect that causes an emotional response with the audience whilst retaining a practical affect on the staging.

WILL PEOPLE USE IT?

The main issue with a project like this is you run the risk of having little or no interest from your target audience, which is why I believe the ability to look through an actor's eyes is what what will sell the idea. Looking at other VR projects, positive feedback seems to come from the combination of immersing yourself within your "virtual self" and interacting with others. This is an account from reddit user "rickyjj" using the relatively new VR beta program AltspaceVR, Ricky attended a party in a virtual reality apartment where music was being played up on a big screen, they decided to play karaoke videos and people began to sing together, because of AltspaceVR's positional 3D audio each user could stand in their own groups and sing with the people that they wanted to sing with or stick together in one big group if they wanted their voice to be heard by everyone - if a group of strangers are happy to create music together, a group of performers or friends could make great use of a program like this.

https://www.youtube.com/watch?v=yxJm9uiaHVU

At the end of his account, Ricky said that "The weird thing is that my memory of the "party" today is so vivid, it feels like I actually went to a real party, even though we were all robot avatars" (reddit.com). Whilst the experience was already "vivid", the ability to use and see human avatars of the actors would create a more immersive experience, this technology has been looked at many times in the past with programs like Autodesk 123D and is currently being implemented in IBM's VRMMO Project "Sword Art Online: The Beginning", inspired by the Japanese anime of the same name. Beta testers will be able to "scan their bodies which will then be rendered as 3D avatars for the demonstration" (rocketnews.com).



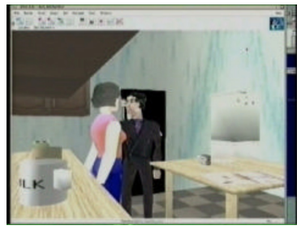
Sword Art Online: The Beginning

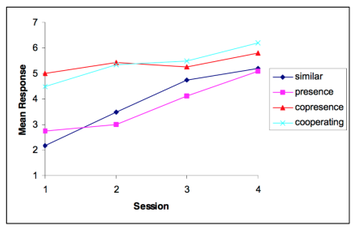
Autodesk 123D Capture Test (Organic Material)

Autodesk 123D Capture Test (Static Object)

PROPRIOCEPTION

Not only with these human avatars give a sense of immersion, but the combination of different psychological elements will give the user a virtual presence, or more specifically, proprioception within the space. Proprioception is the psychology related to our sense of self, our brain's adapt to environments that they are placed in and to do this they often take "shortcuts", these shortcuts can be exploited, thus creating an illusion for our brains. This has been proven many times, most famously with the rubber hand experiment, the test subject's hand would be hidden and a fake rubber hand would be placed in front of them, the real and fake hand would be touched simultaneously and eventually the subject's brain would begin to see the fake hand as their own, even flinching when threatened with a knife or a hammer (newscientist.com). When it comes to VR our brains have a simple rule "if this is where I am, then this is where my body is", to achieve this, we simply need to trick our brain into adopting the environment. An article from ptom.net states three things that can be exploited to achieve this, first of all we have "tacticle calibration for adoption", whilst MDVR won't implement any physical proprioception cues from outside sources, it makes use of aural stimuli in terms of live performance, it also uses realistic hand gestures within Leap Motion such as pointing, tapping and swiping, rather than a complicated set of signals. Secondly there could be "mirrors and environmental cues", allowing the user to see the result of their actions, this also relates to audio cues which is why MDVR will implement positional 3d audio on the harmonies, and sound effects for footsteps. Finally there should be "isomorphic boundary conditions", as the space is supposed to reflect a stage that you share with other performers, you would not be allowed to use all of the space, MDVR will implement "actor circles", a thin line that can be seen when an actor moves into your peripheral vision, this is a visual cue to make the user aware of their position on the stage (Paul).





Questionnaire Results

DIVE

At the turn of the century, a program known as DIVE, using a similar premise as MDVR was attempted with less than satisfactory results. It was a blocky virtual space with a mouse that was used to select facial expressions, turn their heads or select actions. Since VR technology was not readily available, a virtual spaces were very much in their infancy, DIVE had a distinct lack of proprioceptive cues, despite this, one tester stated on his questionnaire "It's kind of becoming - having its own kind of reality... we've only done it four times now, and now that that horrible beginning is kind of finished... you could see that it then becomes quite absorbing, and you kind of enter into it." So whilst the space received a lot of negative feedback, it showed the humble beginnings into an "absorbing" project, something that MDVR can build upon (Slater).

REFERENCES

Chapple, Craig. "Eutechnyx On Lighting Up VR And Expanding Its Business". Develop-online.net. N.p., 2016. Web. 18 Mar. 2016.

Luhn, Jeffery. "Understanding How Soft Boxes Work | Photoflex Lighting School | Photoflex". Photoflex.com. N.p., 2012. Web. 13 Mar. 2016.

newscientist.com,. "Body Illusions: Rubber Hand Illusion". New Scientist. N.p., 2016. Web. 4 Mar. 2016.

Paul,. "Ptom.Blog Â» The Avatar Mirror: Exploring The Parameters Of Proprioceptive Adoption In Virtual Environments". Ptom.net. N.p., 2014. Web. 22 Mar. 2016.

photokonnexion.com,. "Soft Light - Definition :: Photokonnexion.Com". Photokonnexion. N.p., 2016. Web. 15 Mar. 2016.

reddit.com,. "Party At A VR Apartment". reddit. N.p., 2016. Web. 23 Mar. 2016.

rocketnews.com, Anime. "IBM's Sword Art Online Virtual Reality MMO Project Teased In Screenshots, Videos". RocketNews24. N.p., 2016. Web. 23 Mar. 2016.

romeoshootsphotos.com,. "Mini Case Study : The Lighting Of Mrs Morticia Addams". Romeo.Shoots.Photos. N.p., 2014. Web. 20 Mar. 2016.

Slater, M. Acting In Virtual Reality. 1st ed. London: Department of Computer Science University College London, 2000. Web. 23 Mar. 2016.