# Virtual Reality – Group Work

## Claustrophobia Management Simulator

Main aspects of the simulation is the level of emersion the user will experience whilst interacting with the world and objects within it. The theme of Phobias have been suggested by team. Below are a few suggestions that might provide some interesting forms of interaction and simulation.

**Suggestions**:

* Phobia Simulator
  + Tachophobia – Fear of speed
  + Thalassophobia – Fear of the sea
  + Claustrophobia – Fear of small spaces
  + Acrophobia – Fear of heights
* Travel sickness - boat, car, and aeroplane.
* Driving simulator
* Flight simulator
* Training Centre

**Team meeting notes (25/02/2016)**

The team have decided to develop a claustrophobia simulation. The sim will encompass scenarios and interactive ques that will allow the user to experience the symptoms of claustrophobia. The purpose of the simulation is too create an environment in which a person suffering from the phobia can manage and control real world elements that may trigger these anxieties and symptoms.

The development of a house with multiple rooms that will have interaction such as a resizing room. There were also talks of a narrow corridor and stair cupboard. Maybe a cellar with consideration to lighting change and better illusion of confinement. The elevator and its confinement is a common fear for this phobia.

Considering the reflection of the phobias severity in the VR by manipulating the dimensions of the house, number of windows and doors and whether they open to a larger space. So say to increase the severity of the phobia experience we increase the trigger in which the user experiences the phobias symptoms such as closed doors or lack of lights each stage.

The construction of a house allows the team to replicate a realistic household scene that will deliver a relatable, immersive and comfortable environment in which phobia symptoms can be simulated.

The team are meeting on **1/03/2016**, time TBC, to finalize design ideas and begin delegating work amongst the team. Each member is researching the listed aspects below of the phobia:

* Symptoms - Andy
* Scenarios- Casey
* Triggers - Zenon
* Existing – Me

**Symptoms**

There two dominant aspects to the symptoms of claustrophobia, the feeling of restriction and suffocation. Research has been done into the application of VR in health treatment. VRT (Virtual Reality Therapy) is area of interest for researchers as it is non-invasive, safe and cheaper than physically simulating phobia scenarios. <https://en.wikipedia.org/wiki/Virtual_reality_therapy>

**Existing VR Methods of Claustrophobia and Health related Treatment**

Claustrophobia is still largely understudied. Treatment methods like VR simulations have been an area of interest for some researchers.

1. *VR used to combat phobia symptoms*

Study has proved that most people experience symptoms associated with claustrophobia when having an MRI scan as it is carried out in such a confined space. Experiments were done using VR goggles on patients undergoing an MRI scan whom had been diagnosed claustrophobic. It was found that patients wearing the VR headset could endure a 10 minute MRI scan displaying very mild symptoms if any compared to another claustrophobic patient having a MRI scan without a headset. <https://en.wikipedia.org/wiki/Claustrophobia#Use_of_virtual_reality_distraction_to_reduce_claustrophobia>

Mock MRI scanner hardware has been developed for phobia management, staff training and research purposes. <http://www.pstnet.com/hardware.cfm?ID=92> Maybe hardware like this can be virtualized. <http://www.imaging.psu.edu/facilities/3t-mri/equipment/mri-simulator>

1. *Health Diagnosis Tool*

Virtual reality is often used as a diagnostic tool in that it enables doctors to arrive at a diagnosis in conjunction with other methods such as MRI scans. This removes the need for invasive procedures or surgery. <http://www.vrs.org.uk/virtual-reality-healthcare/>

1. *Phobia management Simulation research*

Research has been carried out into the development of virtual environments that can replicate scenarios that will trigger phobia symptoms. This provides an individual with such a phobia a means or place where they can practice, train and manage these anxieties. <http://www.vrs.org.uk/virtual-reality-healthcare/claustrophobia.html>. The next link below is an article on a simulation developed to manage phobia symptoms. This article is particularly useful to our suggestions so far as it mentions common scenes and objects which trigger symptoms of claustrophobia e.g. elevator, closets, tunnels, aeroplane. <http://www.vrphobia.com/closed.htm>

1. VR simulation to distract a patient in pain

Again the application of VR extends to psychological treatment and this case an immersive distraction. <http://www.hitl.washington.edu/projects/vrpain/> ­­

**References:**

<http://www.clomedia.com/articles/when-simulation-is-better-than-reality>

<http://www.proflightsimulator.com/?hopc2s=kbgkbg>

Claustrophobia definition: <http://www.nativeremedies.com/ailment/dealing-with-claustrophobia-info.html>

<http://phobos.psychologicaltechnologies.com/>

VR used in Healthcare, Virtual Reality Site, available at: <http://www.vrs.org.uk/virtual-reality-applications/>

Scenes

* Elevator
* Long narrow Hallway
* Cellar
* Revolving door
* Cupboard room(could be toilet or bathroom)