Title: An investigation on how virtual reality can influence sensory perceptions of reality.

Introduction

Virtual reality provides visual experiences via optical immersion. A key feature of VR is its capability to induce complete visual immersion. If a user is completely immersed within their virtual domain, the domain itself could be altered to enhance their experience. Redirected walking is an example, where subtle rotation of a virtual plane subconsciously prompts a user to change direction (Razzaque, 2001) emulating a larger domain for walking.

The aim of this project is to understand ways virtual reality can influence sensory perceptions of reality. A key part of the project experiment will use VR to make small nuanced changes to a user’s sensory perceptions without their knowledge. Such an influence should make a participant believe they’re operating in one way, when in a real world domain they are subtly acting in another.

This dissertation will comprise two separate experiments. Both experiments will exhibit a scenario in both a real and virtual environment. The virtual domain however, will dynamically alter in order to divide real and virtual world perception. From this, differences in participant actions between the two domains will be exhibited. Therefore VR’s influence on a user’s reality can be evaluated and discussed.

Initially experimental scenarios have to be defined, this will require research into how perception can influence a human’s decisions. Next, the Unity 5 game engine will be utilised in order to create and animate a virtual environment. A HTC Vive headset will place a user in the virtual environment. Its software plugins will be added to ‘Unity 5’ in order to create an intractable domain. Depending on scenario choices, real world apparatus will likely need to be sourced for interaction in real and virtual planes.

Virtual presence body posture

For the future, VR has potential applicability within the gaming industry. However, its emancipatory confounds restrict exploration and varied motion, which in turn breaks the illusion of walking around a real domain. This problem has been addressed with add-on hardware such as the Virtuix Omni. However two key obstacles face a 3rd party hardware solution (such as the Omni). Metaphorically its integration with developed software and literally its potential size. This indicates the need for a different solution. One way investigating VR’s influence on real perception could form a solution, is by examining how virtual motion could simulate real motion. Therefore giving a player the sensation of traveling a long distance virtually than that in reality, and thus increasing the perceptive size of the virtual domain.

References

Sharif Razzaque, Zachariah Kohn, Mary C. Whitton . (2001). Redirected Walking. *Eurographics 2001 - Short Presentations*. 1 (-), -.