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# VR Experience Evaluation

## **Resident Evil 4 VR**

**Image Quality**

While the virtual environment design is the same style as the original 2005 game, it has remastered the visuals and translated the original game design very well into a VR environment that the user can navigate.

**User Interface**

For the Heads-Up Display (HUD) aspect of the UI, this experience follows the Oculus Best Practices Guide on pg. 31 as the experience avoids major clutter or more importantly a permanent reticle. Due to Resident Evil 4, being very action-oriented with the player needing to point and shoot. Resident Evil 4 addresses the issue with having a laser point on the weapon and having a clear indicator of what objects can be hit.

Moreover, the UI for this experience follows the *Avatar* guideline to a certain extent as there is a visible representation of the user’s body as the hands are very visible as well as interactable items on the avatar’s body. It does a good job of showing how and where the user can interact with their avatars body. Though it does not really generate a torso or feet.

**Movement**

The experience gave me two primary options for navigating the environment. The first option utilizes *Teleport* locomotion that has the user teleport to navigate through the environment. The second option utilizes *Smooth Continuous* locomotion that has the user navigate through the environment using the thumbsticks with the left thumb-stick controlling the player walking through the virtual environment and the right thumb-stick controlling the initial head position of the user’s avatar. Though the user can look through the virtual environment with the headset.

Additionally, the experience abides by the Oculus Best Practices pg. 17 by having the user move at a constant velocity while avoiding gradual acceleration for increasing speed. This is meant to help avoid simulating motion sickness due to the eye’s interpretation of movement while the body is standing still. Additionally, it follows the *Head Bobbing* guideline in pg. 18 by not having the user’s avatar do any head-bob.

**Immersion/Presence**

The immersive options for navigating through the environment and using items in-game immerses the user into the game as it creates a more natural experience by having the user navigate through the scene in real-time and being able to interact with a variety of items like a first-aid item, a primary weapon item, a second weapon item, a knife, and bullets.

Additionally, the experience does simulate a 3D environment that user can interact with not only visually but also aurally. Specifically, enemies coming from different locations can be heard at different locations. For example, an enemy behind the user can be naturally tracked to behind the user as if a real person was talking to them from behind.

However, the game is not as immersive when dealing with cutscenes and certain animations as it takes the user out of the scene and into a sort of theatre mode. In other words, when a cutscene plays the user is not in the scene while other characters instead they are taken to a screen that plays the scene with the player’s avatar. Additionally, this occurs when the player’s avatar is doing a very dynamic motion like jumping out of the window or jumping over a gap.

**Suggested Improvements**

# Utilizing the immersive option for the using items does not seem as accessible to female players due to the item management system being reliant on the user’s body. For instance, to access the healing item the user must touch their left shoulder. I think that there should be an option that allows the user to assign where they want an item on their body.

# **Half Life: Alyx**

**Image Quality**

The image quality for the experience is amazing as it utilizes an expansive and deeply immersive environment that is essentially a fully realized city that is interconnected in a way that is reminiscent of real-life. While the graphics are not photorealistic with avatars that are animations. The experience brings the characters to life due to realistic animation techniques that accurately reflect human-like mannerisms and accurate facial features and muscle interactions.

**User Interface**

For the Heads-Up Display (HUD) aspect of the UI, this experience follows the Oculus Best Practices Guide on pg. 31 very closely as the experience does not use any sort of noticeable HUD that contains key information. The experience avoids major clutter or a permanent reticle by having the user go through certain moments that explain how to interact with their environment and themselves and having that information embedded into the environment.

For instance, there is not reticle for using a weapon like a gun. The environment will also display and “light-up” when the user can interact and pull something towards them. This is even seen when hacking or interacting with other systems. Finally the user will need to physically operate machines and devices in the environment to get them to start working (not staring at a screen or taking the user out of the scene).

**Movement**

The experience gave a total of 4 primary options for navigating the environment. The 1st two options utilize a *Teleport* locomotion that has the user teleport to navigate through the environment. The difference between the two options is that one option will have the user’s view fade out when teleporting while the other option has the user quickly travel from point A and B, not cutting out the user’s view. The last two options utilize *Smooth Continuous* locomotion that has the user navigate through the environment. One of the options is by having the user navigate based on head orientation (follows the same type of navigation as the Immersive option for Resident Evil 4). The other option is to have the user navigate based on the hand/finger orientation.

Additionally, the experience abides by the Oculus Best Practices pg. 17 by having the user move at a constant velocity while avoiding gradual acceleration for increasing speed. Additionally, the speed at which the user moves through the scene is closer to the speed at which a normal person moves through (compared to the speed the user moves at in Resident Evil 4). This is meant to help avoid simulating motion sickness due to the eye’s interpretation of movement while the body is standing still. Additionally, it follows the *Head Bobbing* guideline in pg. 18 by not having the user’s avatar do any head-bob.

**Immersion/Presence**

Due to the experience enabling more ways to customize how the user can interact and navigate through the environment, it is highly immersive. Due to the attention to the detail, the environment is highly immersive and even relatable as there are plenty of small things that give the environment plenty of life. Specifically, there are plenty of boxes, plants, pots, even trashcans, and more.

Additionally, the experience does simulate a 3D environment that user can interact with not only visually but also aurally. Specifically, enemies coming from different locations can be heard at different locations. For example, an enemy behind the user can be naturally tracked to behind the user as if a real person was talking to them from behind. Moreover, the experience has more noises to simulate the environment and the ambience as it essentially encompasses the sounds a city may have like rain, walking on concrete, alarms, and speakers.

**Suggested Improvements**

1. When setting up the account for the user’s game, there should be an option for a tutorial that explains how to interact with their environment and/or their controls for accessing certain things. While the user is given a tutorial through experiencing the environment and the scene, it can seem a bit overwhelming and possibly unforgiving to new users not experienced in VR.