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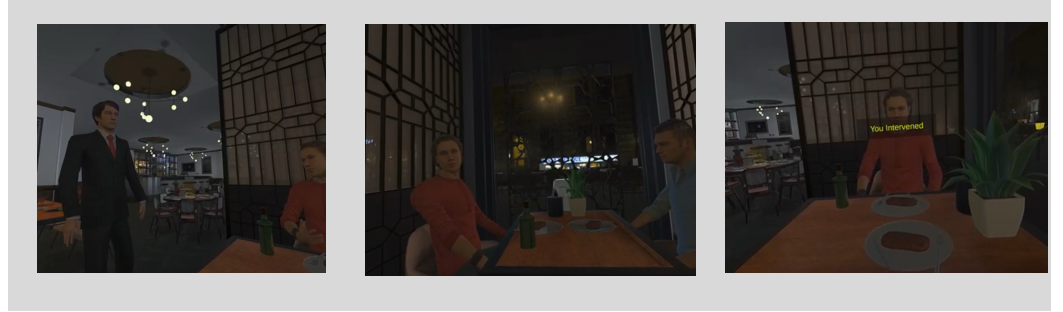
VR Study: The impact of perspective on empathy

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Introduction

This project investigates the potential of virtual reality (VR) as a tool for understanding and influencing human behavior in emotionally charged scenarios. By immersing participants in a VR restaurant simulation, the study focuses on their responses as witnesses to a conflict between a rude customer and a waiter.

The simulation aims to evoke empathy and critical thinking by placing participants in the role of a passive observer. Through this perspective, the study examines how witnessing escalating aggression impacts participants' emotional responses and decision-making.



Preliminary Results (Hypothetical Projections)

- Participants are expected to demonstrate increased empathy scores post-VR, reflecting heightened emotional engagement after witnessing the conflict.
- Feedback may indicate a deeper understanding of the impact of aggressive behaviors on service workers and bystanders.

Methods/Participants

Participants will complete the Empathy Quotient (EQ), a validated 60-item questionnaire developed by Simon Baron-Cohen, before and after the VR experience. This tool is designed to measure participants' ability to pick up on and respond to others' feelings.

Participant Details:

- Participants will be individuals aged 18 and older from diverse backgrounds, focusing on customer-facing roles.
- Pre- and post-VR assessments will compare changes in emotional engagement and empathy after witnessing a staged conflict in a VR restaurant setting.

Empathy Assessment:

- Responses will be scored on a Likert scale, categorizing empathy levels into four ranges: low, average, above average, and high.
- The pre-VR questionnaire establishes a baseline, while the post-VR results reveal changes influenced by the immersive experience.

Procedures

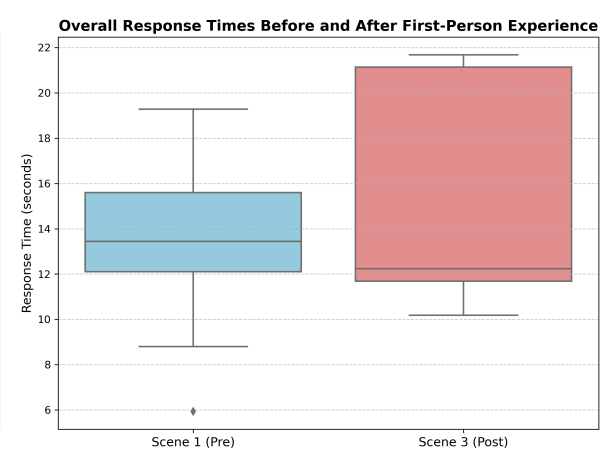
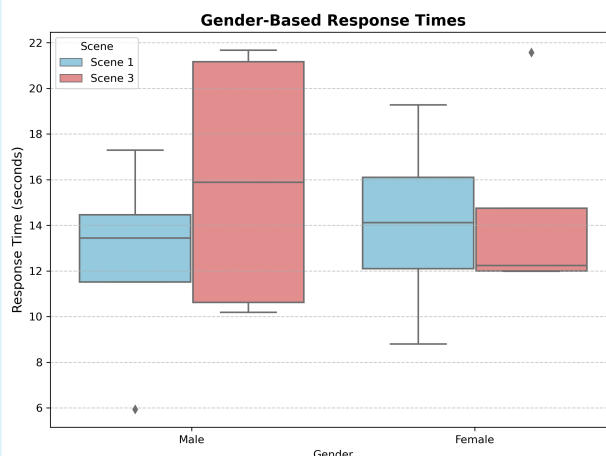
- 1. Pre-Experiment:** Participants will complete the EQ questionnaire to evaluate their baseline empathy.
- 2. VR Experience:** Participants embody the role of a witness, observing a staged conflict between a customer and a waiter in a restaurant scenario.
 - Conflict stages progress from verbal aggression to shouting and culminate in a physical confrontation.
- 3. Post-Experiment:** Participants retake the EQ questionnaire to assess changes in their empathy levels.

Data Analysis:

- Quantitative: Analyze score differences between pre- and post-tests to identify statistically significant changes.
- Qualitative: Use open-ended feedback from participants to contextualize any observed changes.

Data Analysis

The analysis aimed to evaluate the impact of a first-person VR experience on participants' empathy levels and response times. Participants completed a pre-experiment empathy quotient (EQ) questionnaire, experienced a staged VR conflict scenario, and retake the EQ questionnaire afterward. Results showed a statistically significant increase in empathy scores from pre- to post-experiment (T-Statistic: 3.45, P-Value: 0.0106), suggesting the VR scenario effectively enhanced participants' self-reported empathy. However, the paired t-test for overall response times between Scene 1 (pre-experience) and Scene 3 (post-experience) revealed no significant difference (T-Statistic: -0.94, P-Value: 0.38). Gender-based analysis also showed no significant changes for either males (T-Statistic: -1.41, P-Value: 0.25) or females (T-Statistic: -0.12, P-Value: 0.91). These findings indicate that while the VR experience improved empathy, it had no immediate effect on decision-making speed, highlighting the need for further exploration into how VR impacts behavioral responses over time.



Contributions

Mariam Al Magboul
Setting Rendering, Data Collection, Material Research, Asset Research and Rendering.

Mariam Al Khoori
Setting & Assets Rendering, Material Research, Sound and BGM, Video Demo

Shamma Aljneibi
Characters Rendering

Yonathan Wagaye
Characters Rendering, Technical Implementation, Data Collection

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References

1. Mencl, Jennifer, and Douglas R. May. "The Effects of Proximity and Empathy on Ethical Decision-Making: An Exploratory Investigation." *Journal of Business Ethics*, vol. 85, no. 2, 8 May 2008, pp. 201–226, <https://doi.org/10.1007/s10551-008-9765-5>.
2. Technical implementation: Unity 3D
3. Sound and Voice Editing: Audacity