Does Virtual Size Matter? The Influence of Spatial Dimensions of Virtual Rooms on Psychological and Behavioral Outcomes

Eugy Han, Cyan DeVeaux, Jeffrey T. Hancock, Nilam Ram, Gabriella M. Harari, and Jeremy N. Bailenson

INTRODUCTION

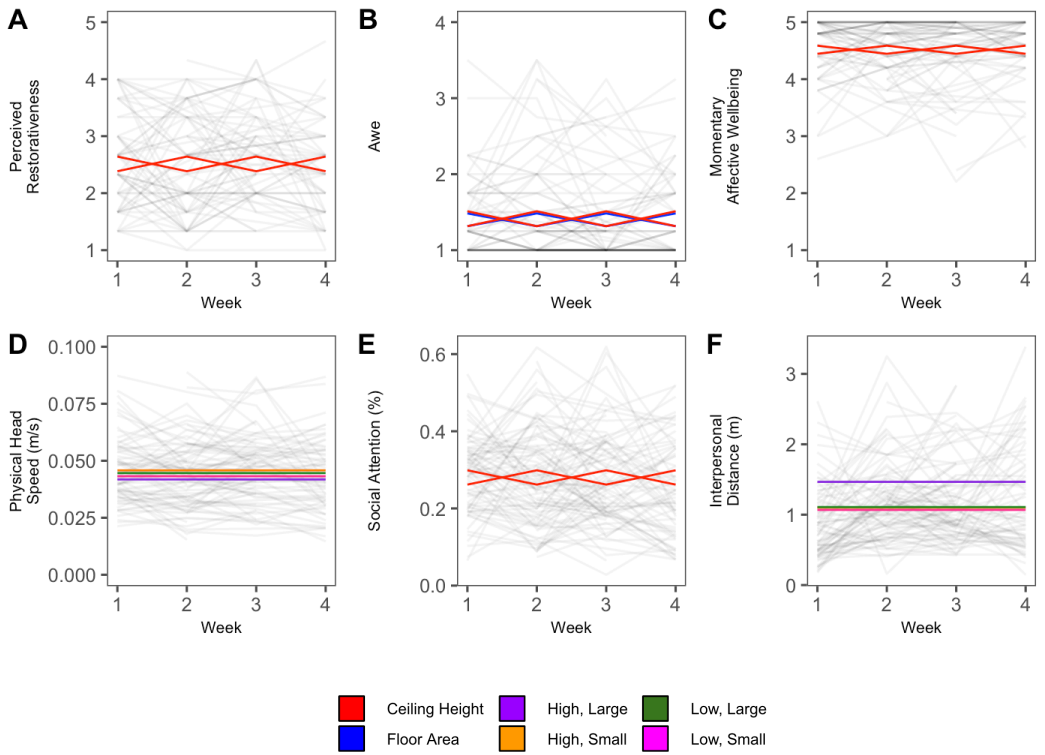
- Physical-world environments have shown that spatial properties shape psychological states and social behavior
- Virtual environments have comparable effects on people as physical-world environments
- **Gap 1:** Difficult to empirically investigate the effects of certain types of environments (e.g., very big rooms, very low ceilings)
- **Gap 2:** Few studies look at social interactions in virtual environments

METHODS

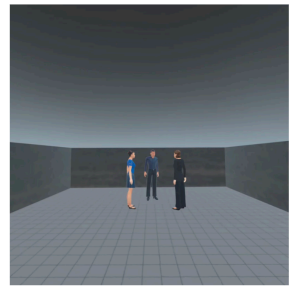
- Groups of 3-4 physically remote participants (n = 110)
- Met in a social VR platform using Meta Quest 2 HMDs
- Discussion every week for 4 weeks
- 2 x 2 design (ceiling height x floor area)
- RMANOVA with a 3-level multilevel structure

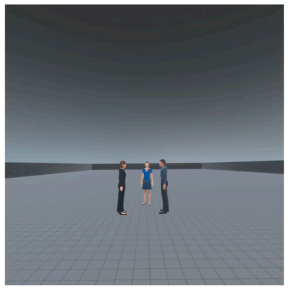
RESULTS

- Virtual environments with a *high ceiling*:
  - Greater perceived restorativeness, awe, momentary affective well-being, more social attention
- Virtual environments with a *large floor area:*
  - Greater sense of awe
- Virtual environment with a *high ceiling* and *large floor area*:
  - Slower physical head movement and Larger interpersonal distance

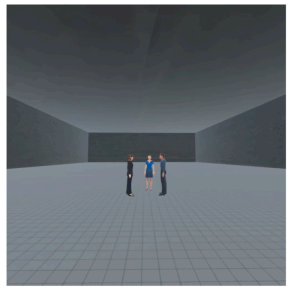


VIRTUAL ENVIRONMENTS


low ceiling, small floor area


low ceiling, large floor area


high ceiling, small floor area


high ceiling, large floor area

DISCUSSION

- Spatial properties of virtual environments influence attitudes and nonverbal behaviors during social interactions
- Implications for designers of social VR platforms, instructors and educators using networked VR for teaching, teams for collaboration, and practitioners using VR to promote well-being

SPSP 2024 annual convention
FEB 8 – 10 · SAN DIEGO, CA