Foundational Immersion Concepts

Developing Immersive Applications

Created by: Chek Tien TAN

Learning Objectives:

- explain Milgram and Kishino's Reality-Virtuality Continuum
- appreciate the different interpretations of immersion

Recap

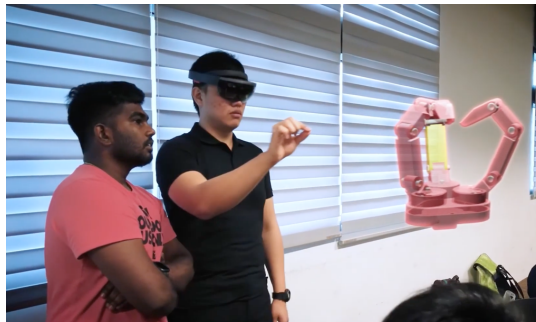- thinking about the differences between AR, VR, and MR experiences

VR vs AR vs MR

Watch:

`https://youtu.be/d3wx3VGtFjo`

Prompt:

What type of experience is this?

VR vs AR vs MR

Watch:

`https://youtu.be/oY_94nGMIXY`

Prompt:

What type of experience is this?

VR vs AR vs MR

Watch:

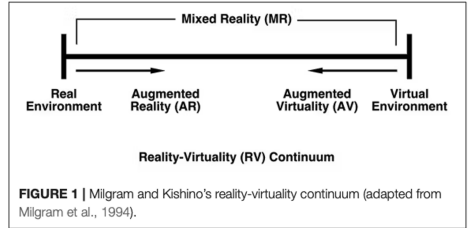`https://youtu.be/DAOKFVCFrJ4`

Prompt:

What type of experience is this?

Milgram-Kishino RV Continuum

- not the immersification continuum
- originally meant for display technologies

Source: https://doi.org/10.1117/12.197321

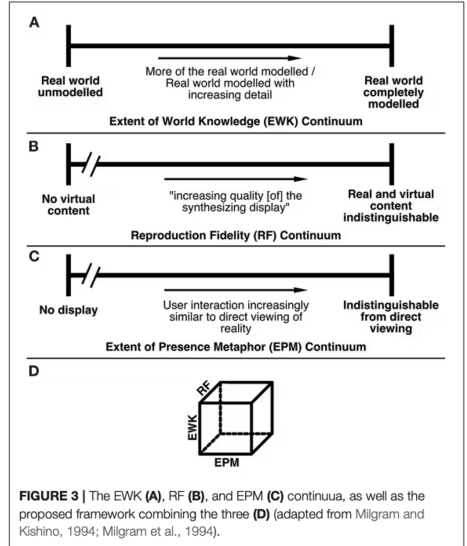FIGURE 1 | Milgram and Kishino's reality-virtuality continuum (adapted from Milgram et al., 1994).

Dimensions of the RV Continuum

- EWK: how much the system understands the real world
- RF: how realistic the assets are
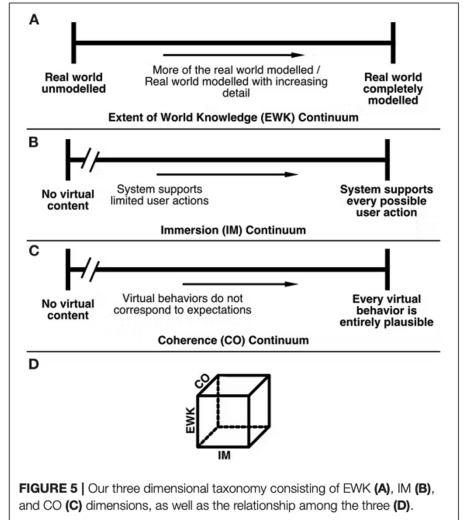- EPM: how interaction affords realism

FIGURE 3 | The EWK **(A)**, RF **(B)**, and EPM **(C)** continua, as well as the proposed framework combining the three **(D)** (adapted from Milgram and Kishino, 1994; Milgram et al., 1994).

Revisiting the RV Continuum

- combined RF and EPM into IM
- added CO to represent the user
- common perception of MR is different

FIGURE 5 | Our three dimensional taxonomy consisting of EWK (A), IM (B), and CO (C) dimensions, as well as the relationship among the three (D).

Summary

Today we covered:

- RV continuum foundations and dimensions
- classifying experiences along the continuum
- updated RV continuum perspectives

Next: Immersion as system properties and user experiences

Further Reading

Key Research Papers:

- Revisiting RV Continuum (2021)
- Place illusion and plausibility (Slater, 2009)

Related Resources:

- Design of Everyday Things (book)
- Meta's Best Practices for Comfort

See weekly-posts.md for complete list of auxiliary resources