



Transformed Social Interaction in Immersive Virtual Reality

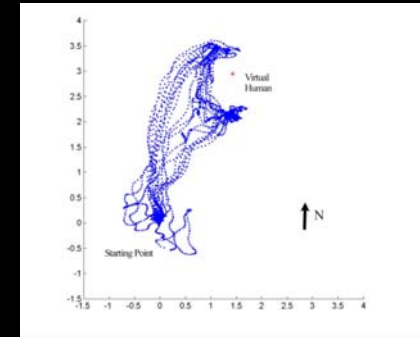
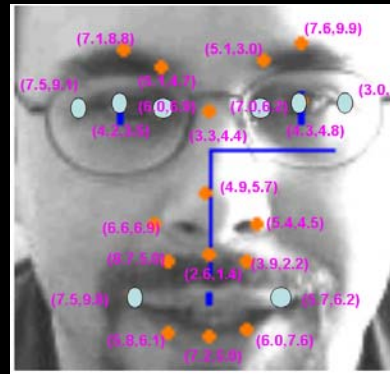
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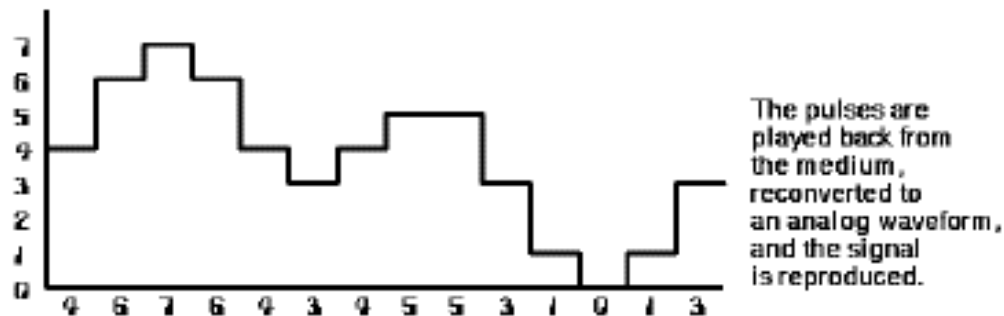
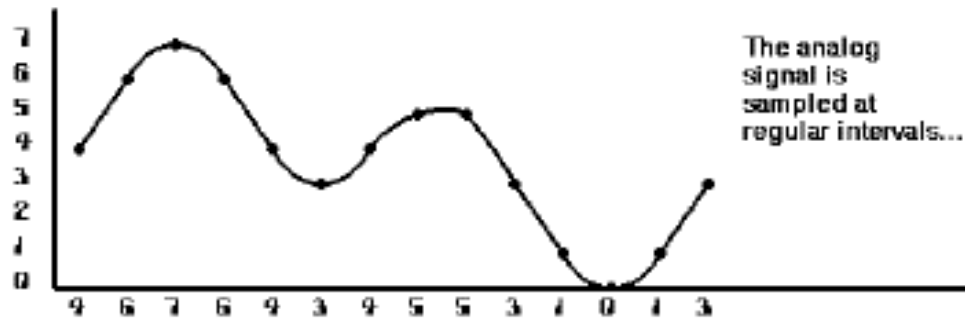
Overview

- Definitions of **Virtual Reality** and **Digital Avatars**
- Theory of Transformed Social Interaction
- Empirical examples
- Ethics/Implications

Digital Identities: (Avatars)



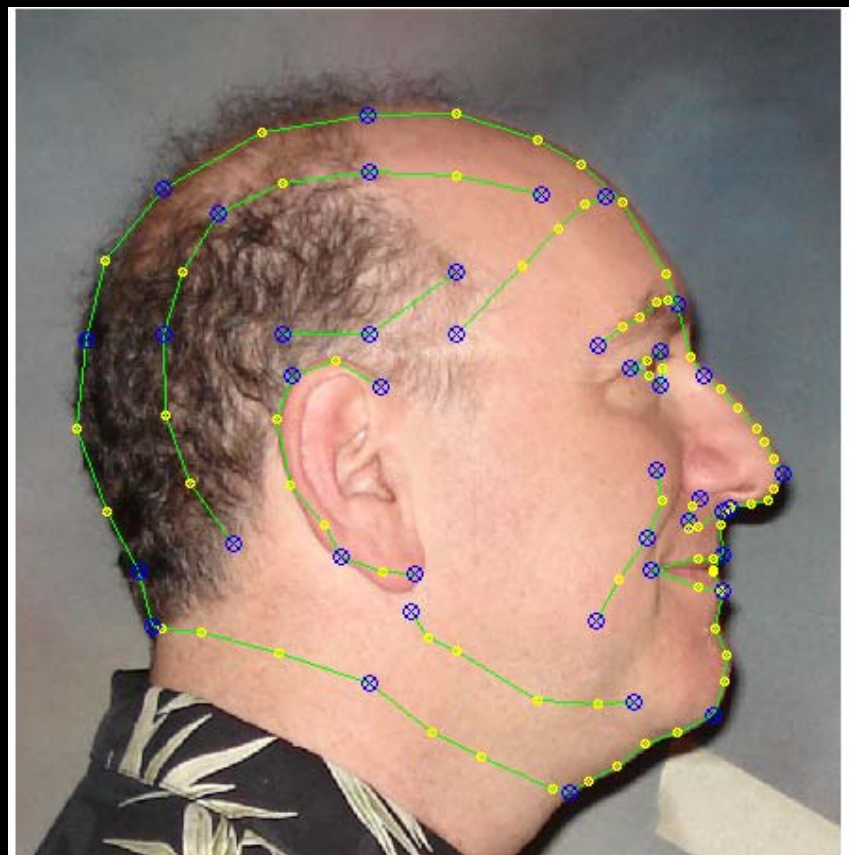
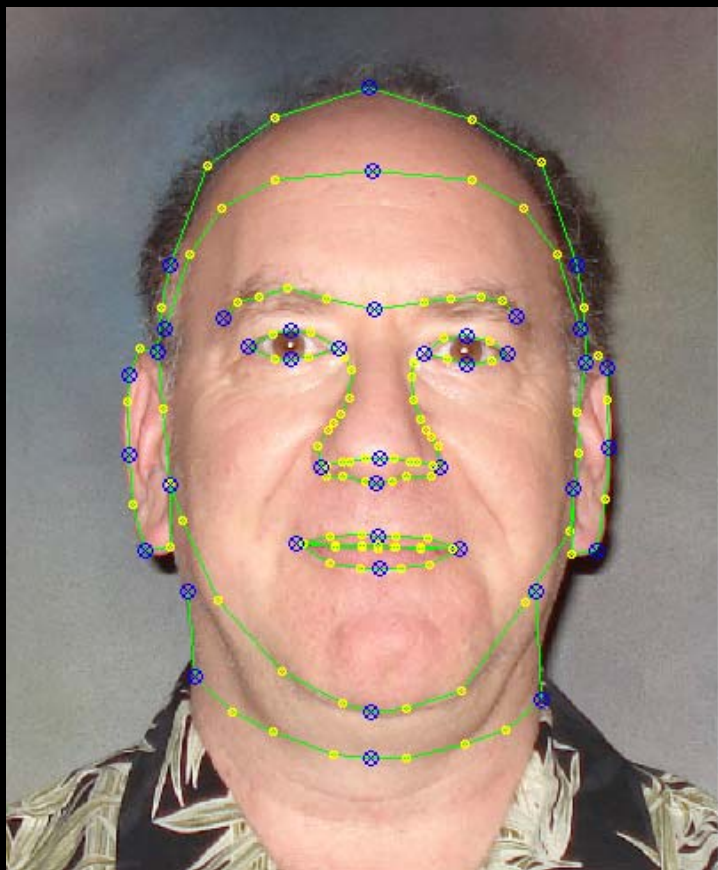
What does digital mean?



What does **digital** mean?

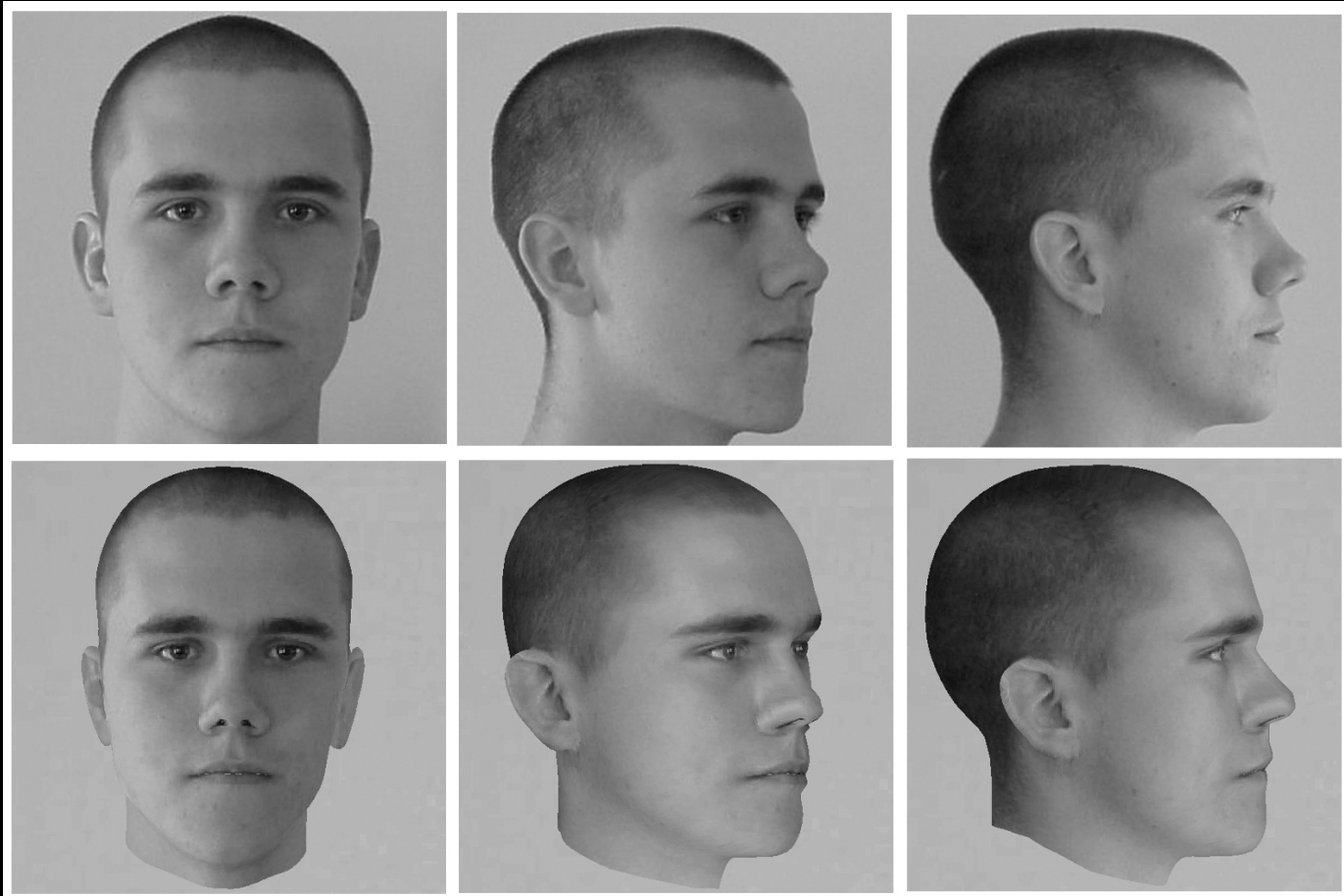
- Continuous vs. Discreet (quality loss)
- Infinitely Replicating (without loss of quality)
- Turns raw information *symbolic* (can be used intelligently later)

Digital Human Representation (Avatar) Creation

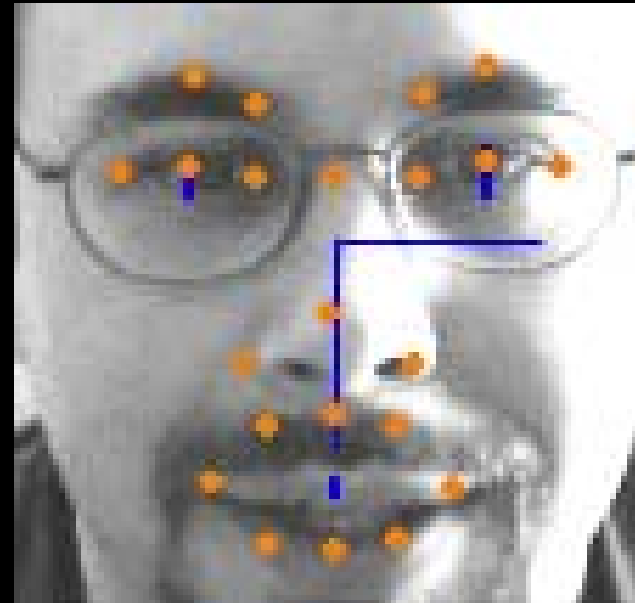


Show 3D Model

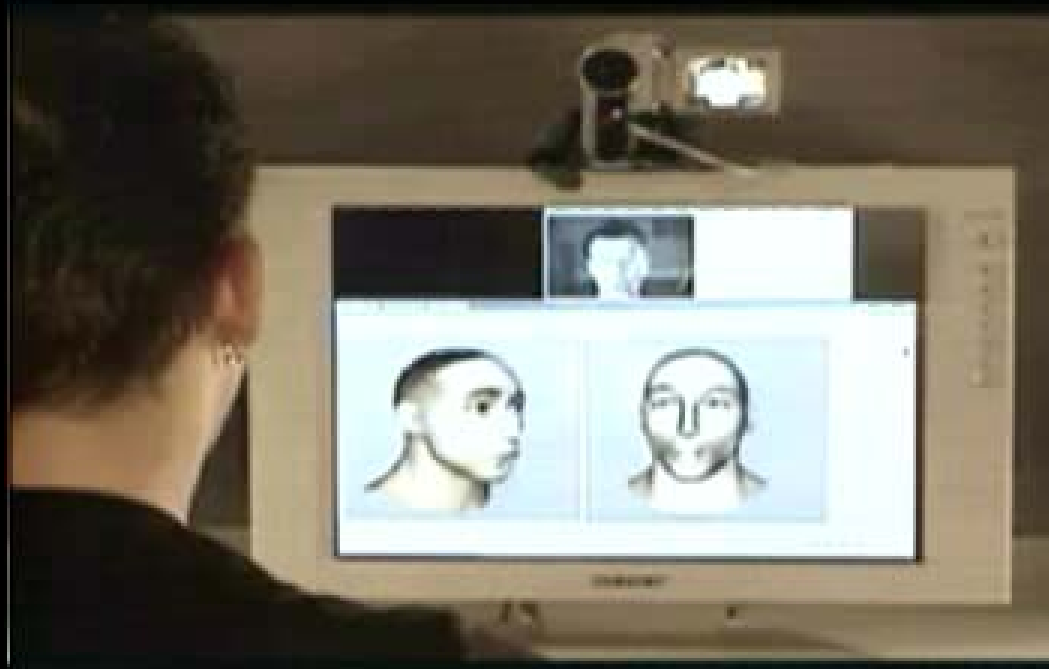
Highly Realistic



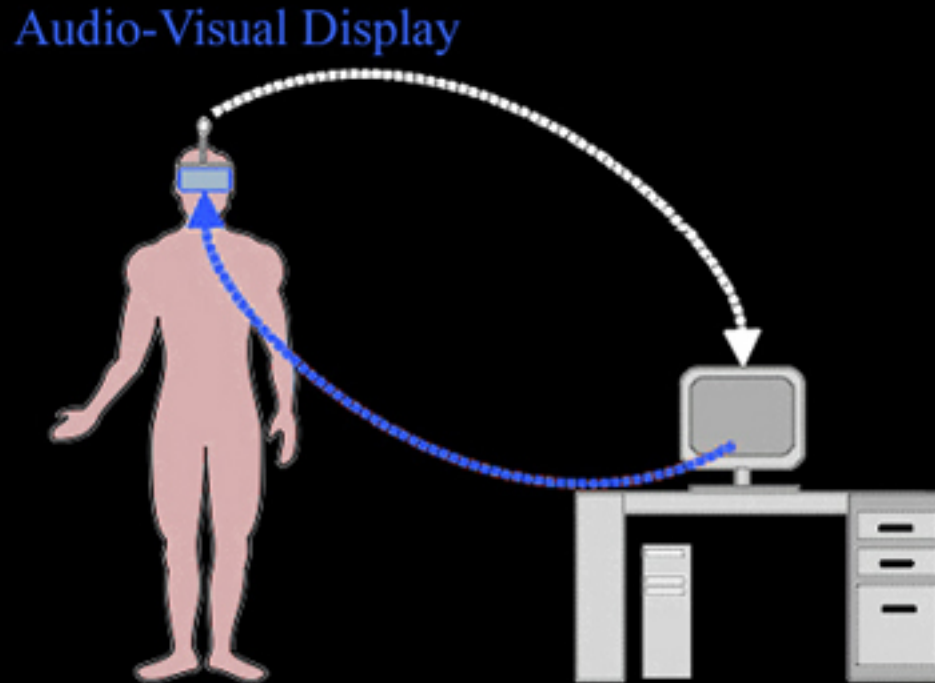
Facial Expression Tracking



Facial Expression Tracking



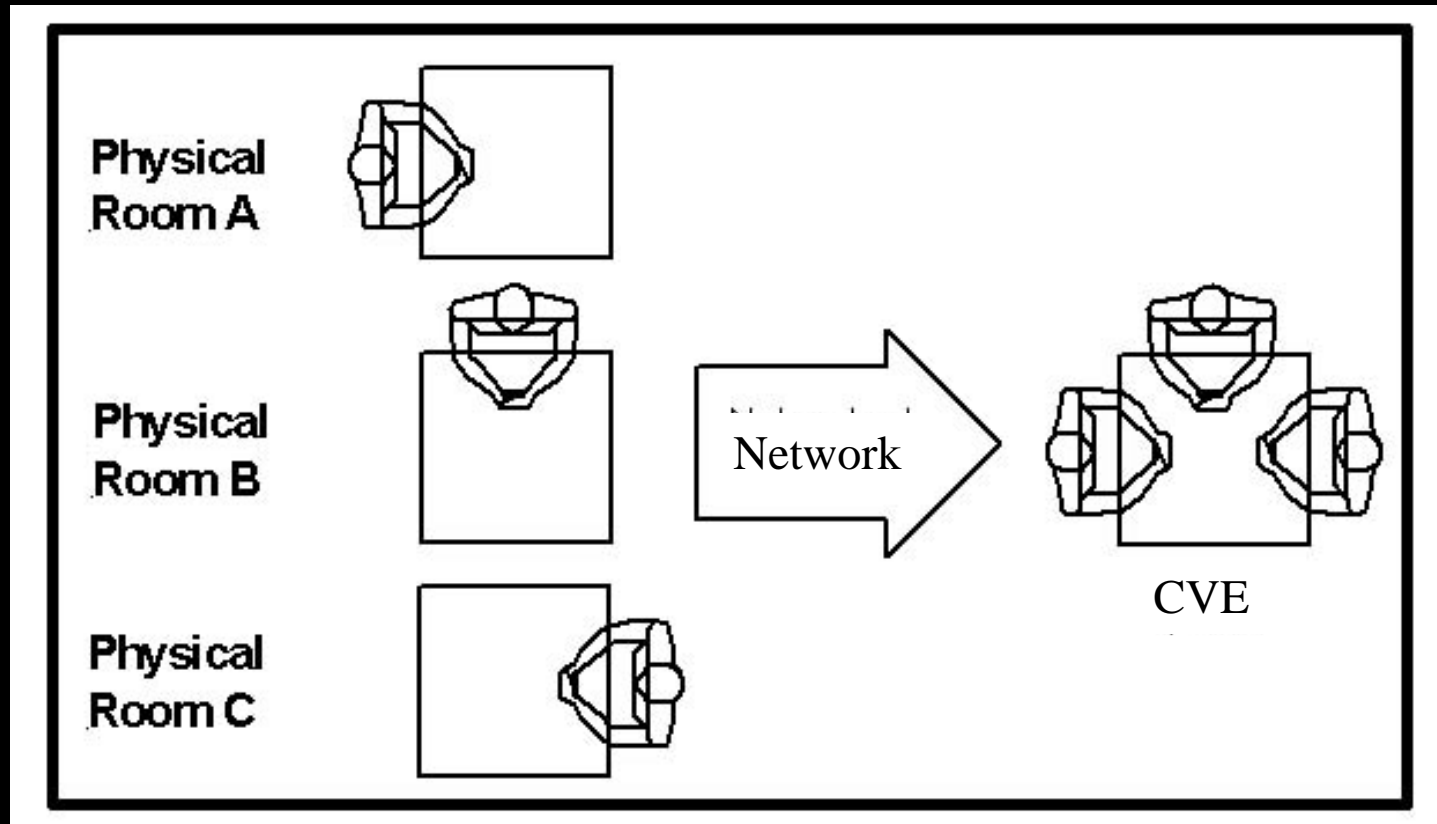
Digital Immersive Virtual Environment Technology (High Tracking)



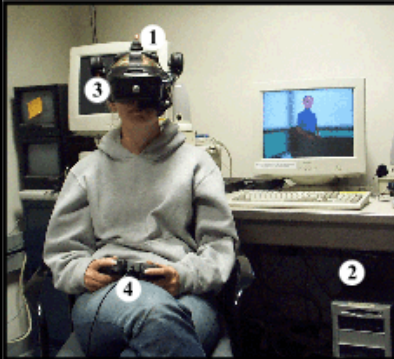
Digital Immersive Virtual Environment Technology



Remote Digital Communication



Collaborative Virtual Environments: High Tech (Immersive VR)



Collaborative Virtual Environments

Low Tech, MMK (mouse, monitor, keyboard)



Why Use CVEs?

- Classic Reasons: Jaron Lanier, Scientific American 2001
 - Gas is expensive
 - Travel is dangerous
 - Bandwidth/lag
 - “eye-contact problem”
- Better than face-to-face?!

Transformed Social Interaction (TSI)



3 Dimensions of TSI

- Transforming Self Representation
- Transforming Social-Sensory Abilities
- Transforming Social Context

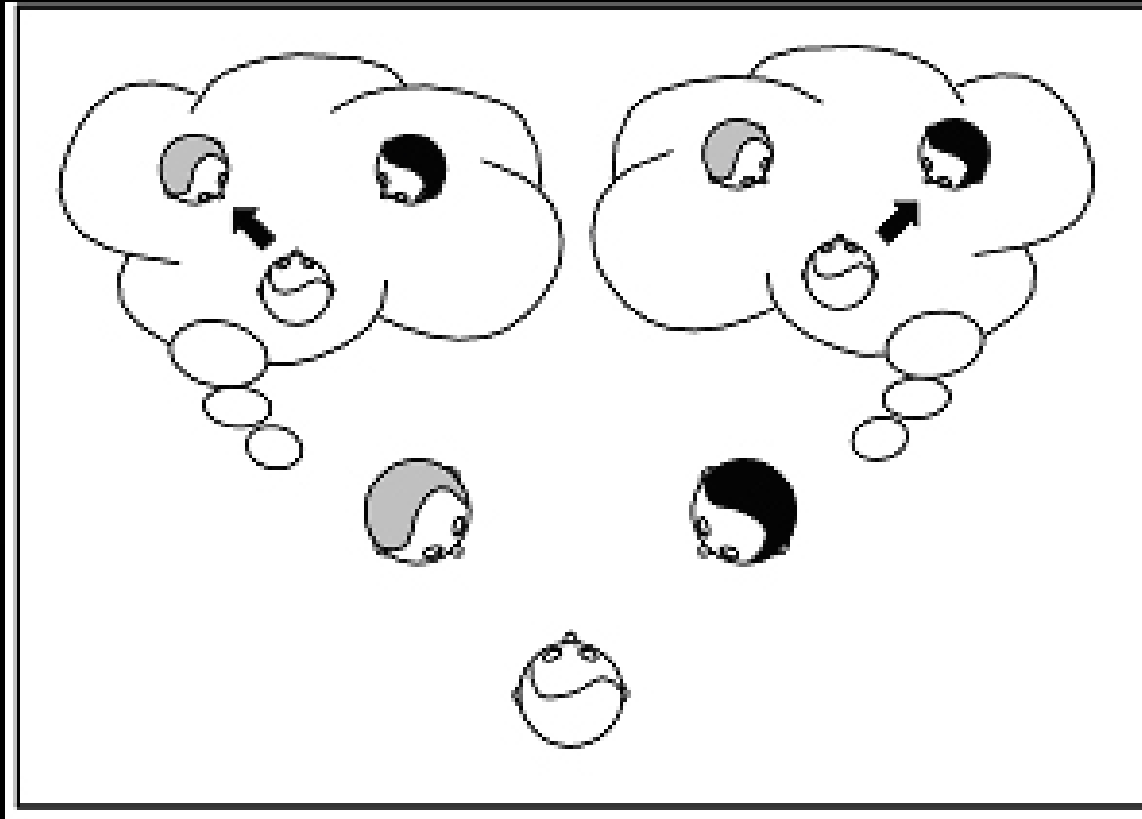
TSI : Transforming Self Representation

TSI: Augmented Gaze

- Gaze is powerful:
 - Learning (Sherwood, 1987)
 - Persuasion (Morton, 1980)
 - Physiological Arousal (Wellens, 1987)
 - Conversational Structure (Kendon, 1987)



TSI: Augmented Gaze



TSI: Digital Chameleon

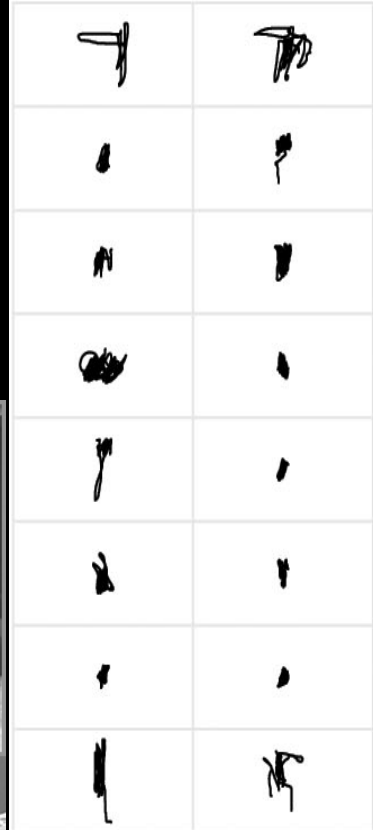


TSI: Digital Chameleon



TSI: Digital Chameleon

- One person unwittingly mimics the other
- Negotiation Task



TSI: Facial Identity Capture



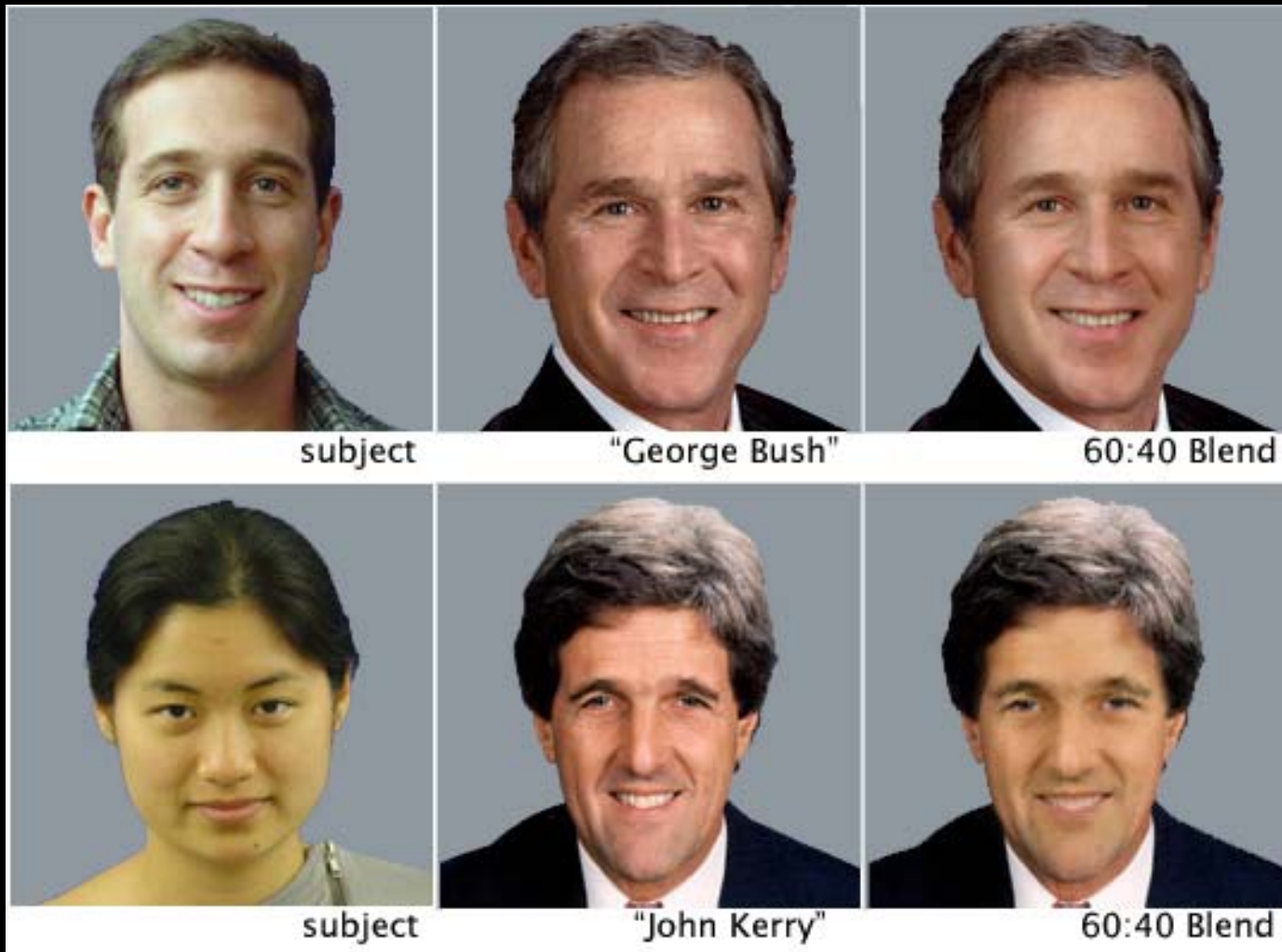
TSI: Identity Capture

- Similarity among people results in:
 - Attraction (Shanteau & Nagy, 1979)
 - More Persuasion (Chaiken, 1979)
 - More purchases (Brock, 1965)
 - More altruistic helping behavior (Dovidio, 1984)

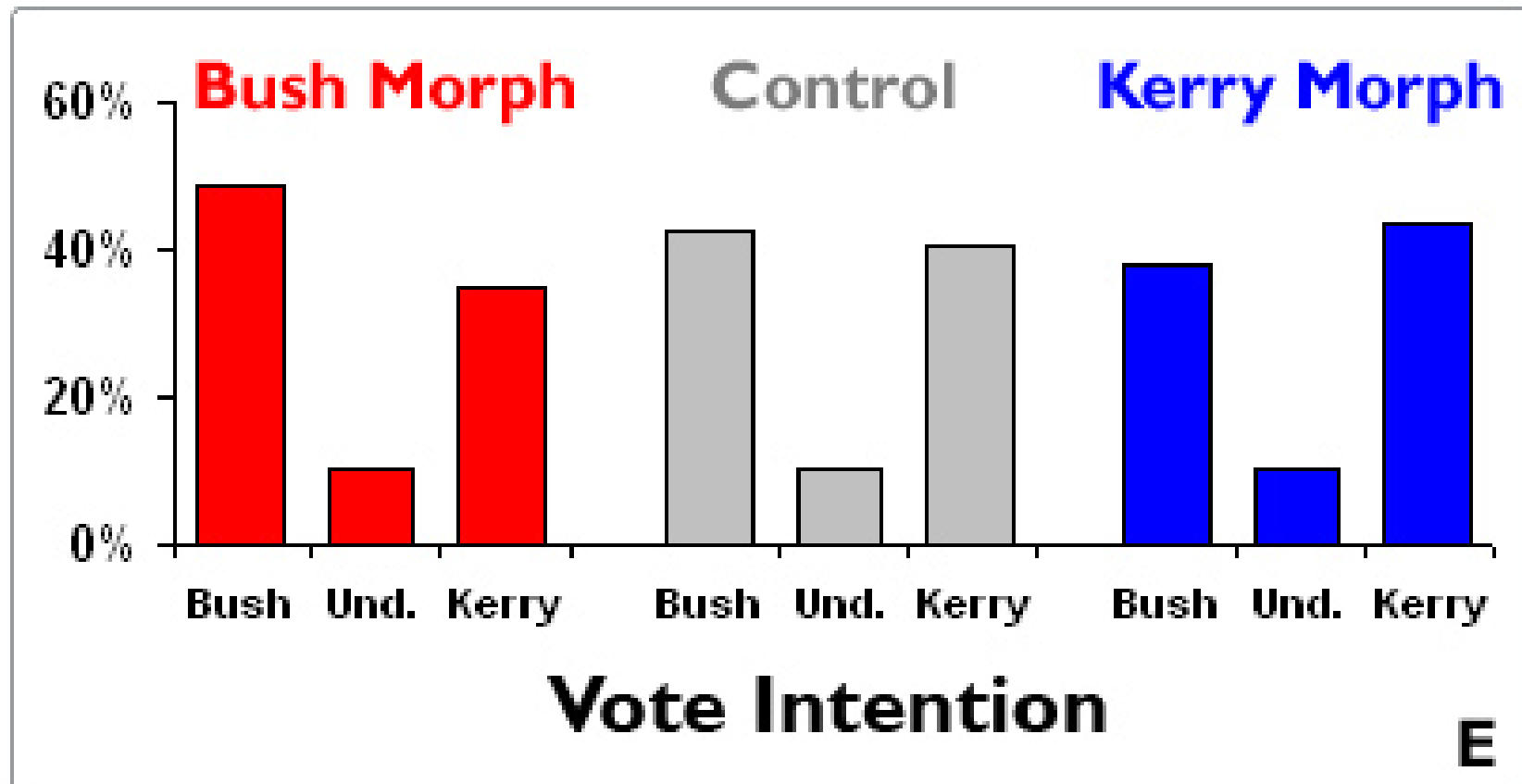
Facial Identity Capture Study 1:

- National random sample (N = 200)
- Week before presidential election
- Viewed candidate photos while evaluating Bush and Kerry
- 3 groups of subjects
 - No morph
 - Bush Self, Other Kerry
 - Kerry Self, Other Bush

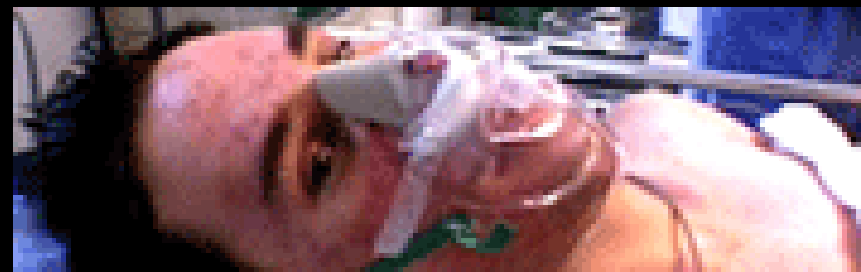
TSI: Facial Identity Capture



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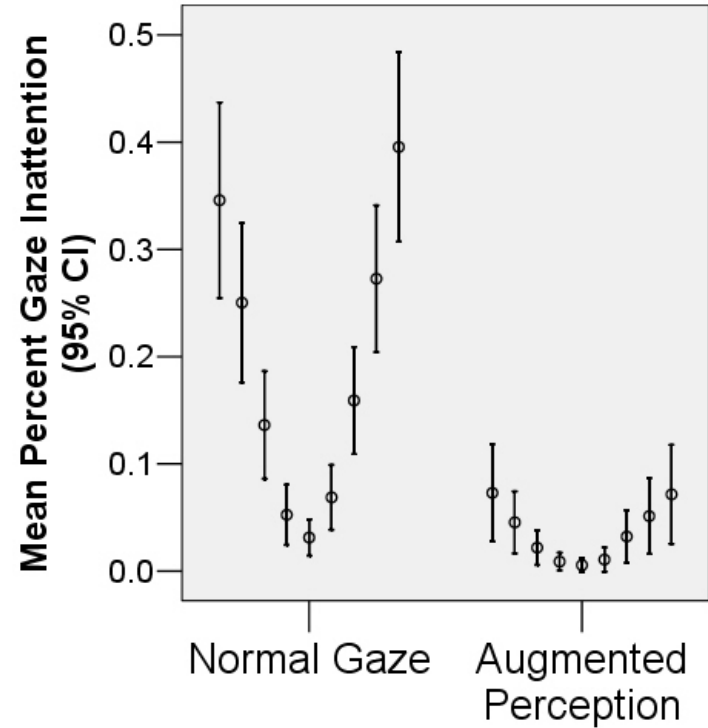
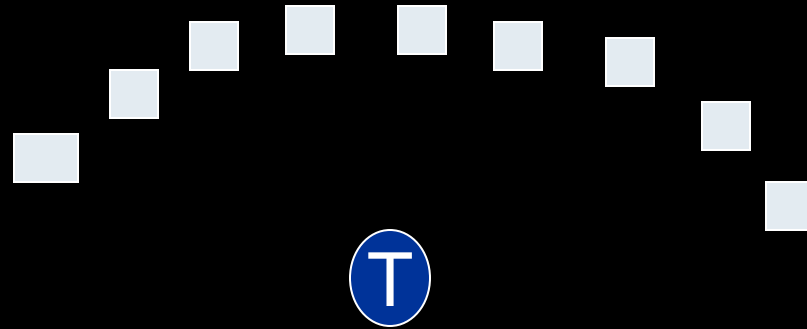


In the physical world?!!



TSI in VR: Transforming Social- Sensory Abilities

Transforming Social Perception



Behavior modeling



TSI : Transforming Social Context

Space

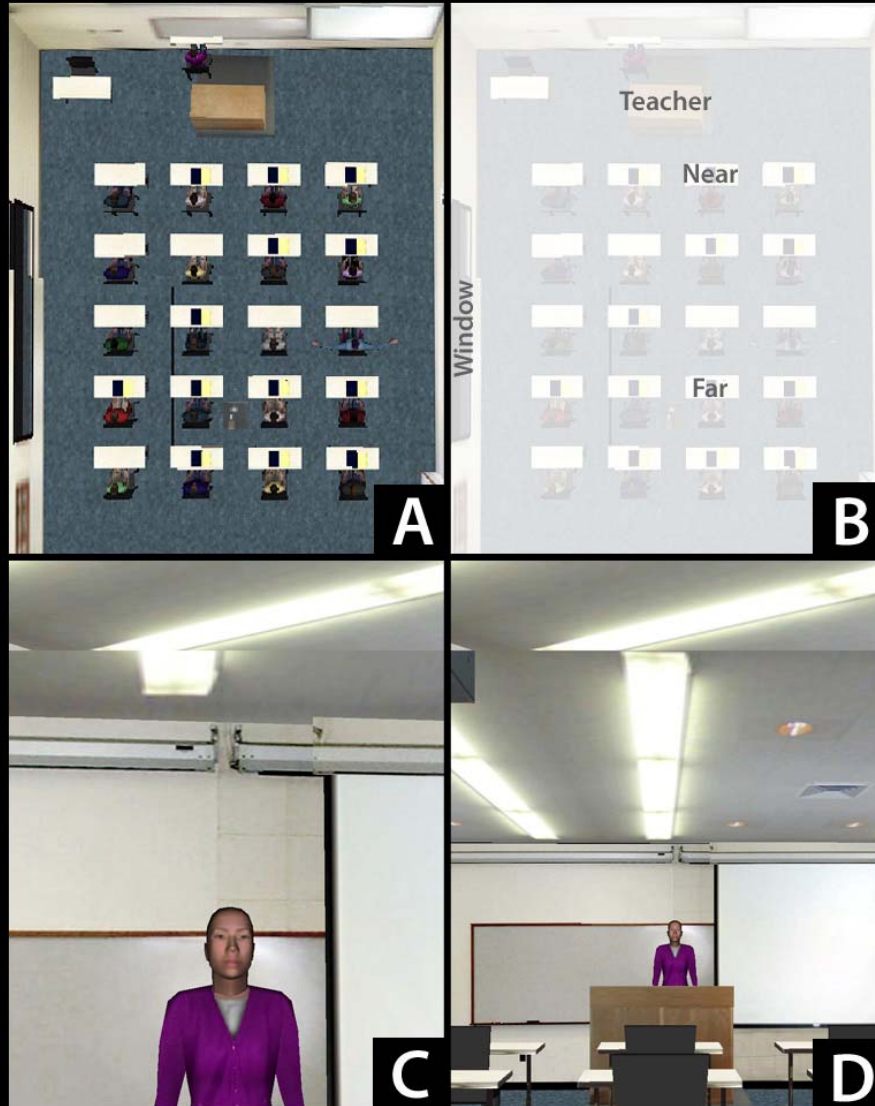
Time

Learning: Transformed Proximity:

Angle



Learning: Transformed Proximity: Distance



TSI : Transformed Conformity



Ethics



The Proteus Effect



Conclusions

- The digital world is a wonderful and scary place
- TSI both effective and hard to detect
- TSI may have drastic implications on digital communication



Thank you!

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