

More AR/VR Psychology

Thr, July 23 (Week 5.5)

Transformed Social Interaction (Bailenson, 2005)

Real world: your form and behavior is how you look like and how you behave. You cannot change your look for a situation or show different behavior to different people at the same time.

In AR/VR: you can choose your form. Also, you can show different versions of your behavior, for example, looking at the eyes of everyone at the same time.

Transformed Social Interaction (Bailenson, 2005)

Augmented Gaze

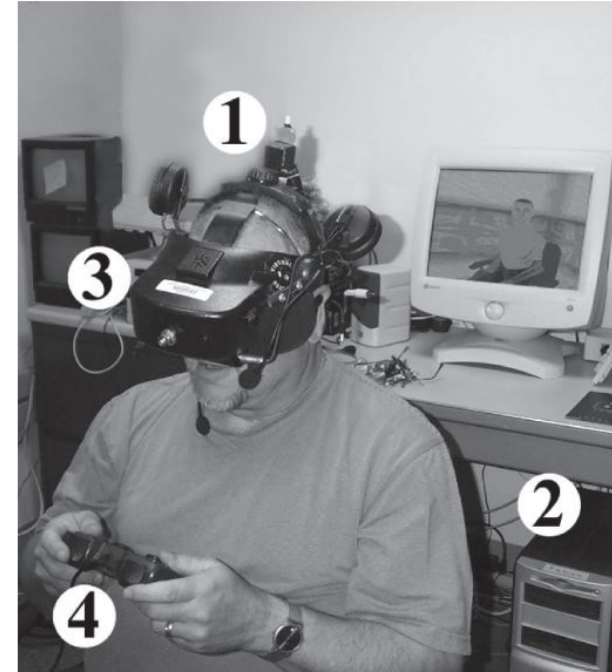
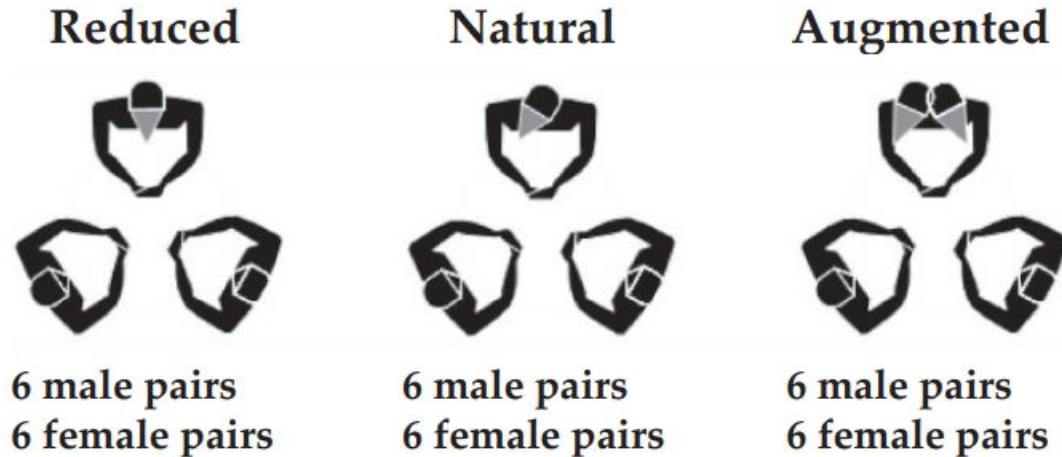


Figure 3. A Depiction of Our CVE System
NOTE: The components are:
1. orientation tracking sensor
2. image generator
3. HMD with intercom device
4. game pad input device.

Transformed Social Interaction (Bailenson, 2005)

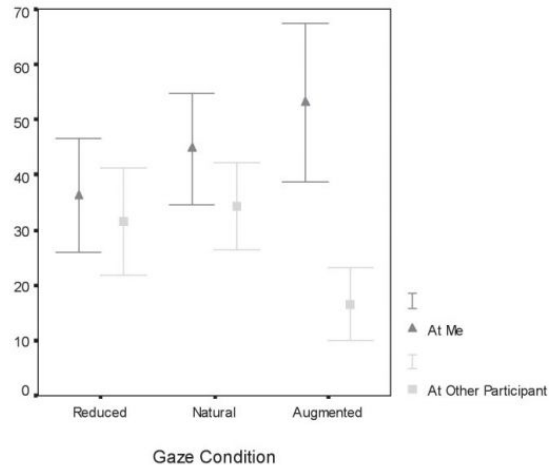


Figure 4. The Average Participant Estimation of the Percentage of Time the Presenter Looked at Himself or Herself Versus the Other Participant by Gaze Condition

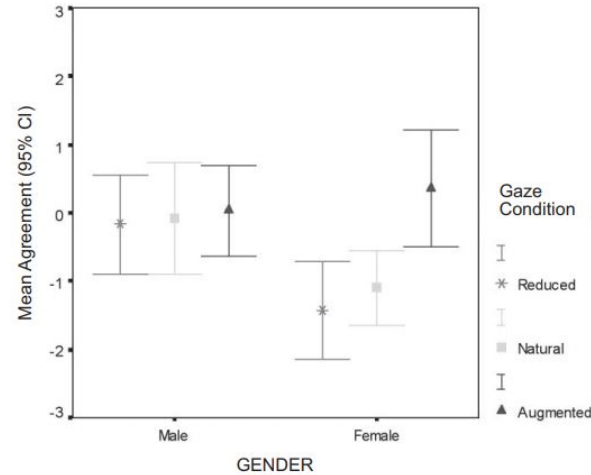


Figure 5. Mean Agreement Scores Across Participant Gender and Gaze Condition
NOTE: Positive scores indicate agreement.

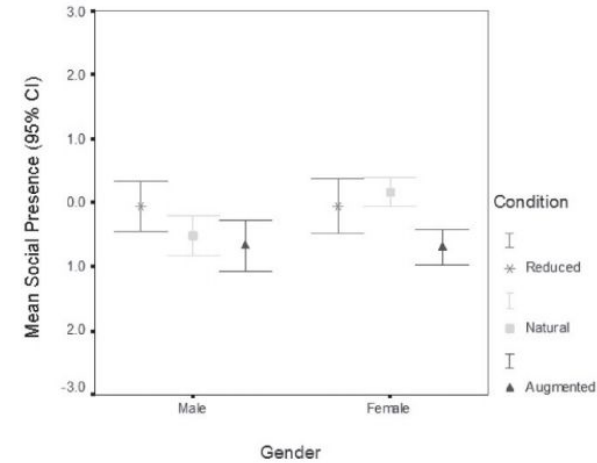


Figure 6. Mean Social Presence Scores Across Participant Gender and Gaze Condition
NOTE: Positive scores indicate higher social presence.

Transformed Social Interaction (Baileenson, 2008)

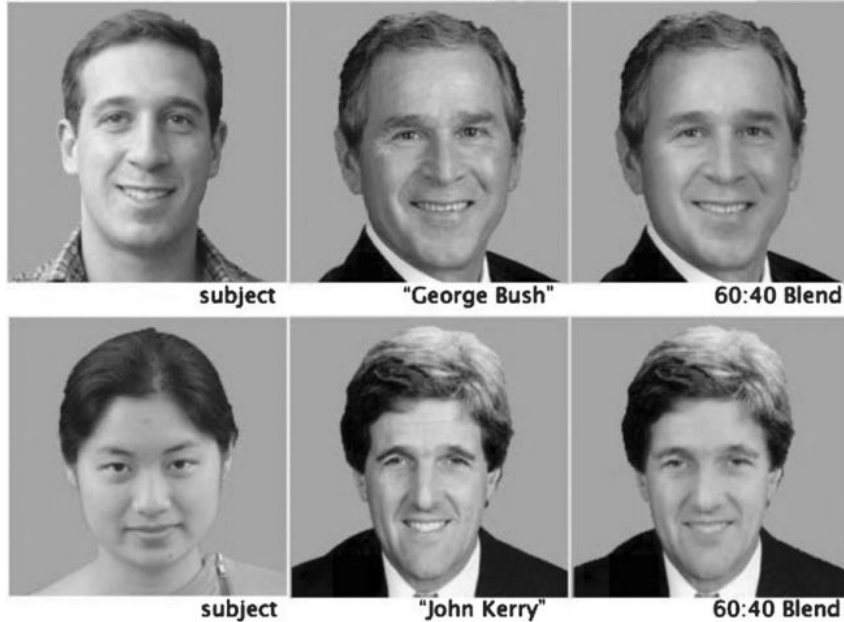


Figure 2. An Example of Two Subjects from Experiment 2, One Morphed with Bush and One Morphed with Kerry. Participants Saw the Two Images

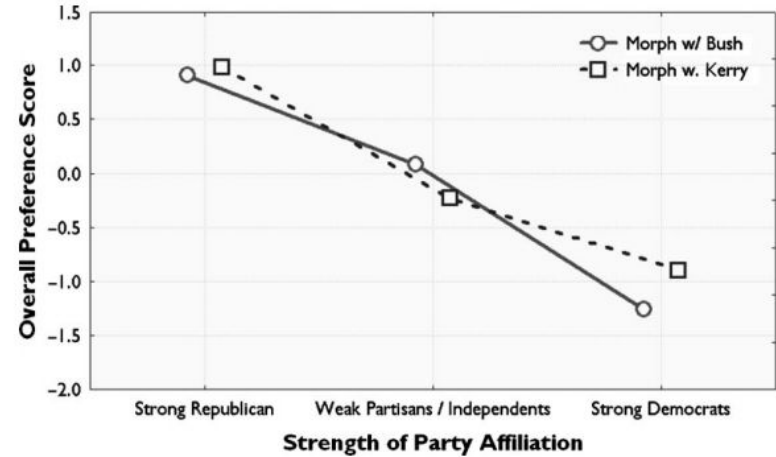


Figure 3. The Effects of Facial Similarity and Party Affiliation on Candidate Preference Score in Experiment 2. Higher Scores Indicate More Support for Bush.

Proteus Effect (Yee & Bailenson, 2007)

Common sense: you may have a different psychological effects toward others when you are in a different avatar.

Proteus effect: you may have a different psychological effects toward **yourself** when you are in a different avatar.

Proteus Effect (Yee & Bailenson, 2007)

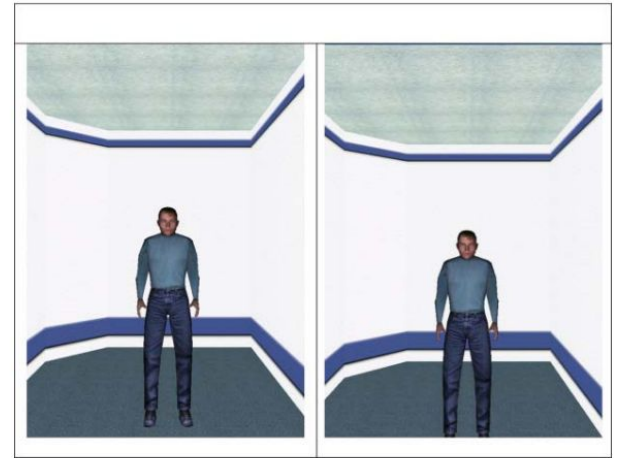
A money splitting task between a participant and a confederate. With \$100, a person suggests the split and the other decides whether to receive. If rejected, neither receives money.

First round: participant suggests the split.

Second round: confederates suggests a 50/50.

Third round: participant suggests the split.

Fourth round: confederates suggests a 75/25.
(75 for the confederate.)



Proteus Effect (Yee & Bailenson, 2007)

Split 1: the suggestion for first round

Split 3: the suggestion for third round

Final Split: how often they agreed to the unfair 75/25, knowing it's the last one.

Table 2 The Means and Standard Deviations of Interpersonal Distance and Split 1 Across Height Conditions

Height	Split 1	Split 2	Final Split
Short	54.99 (12.47)	52.06 (7.30)	0.72 (0.46)
Normal	58.69 (15.85)	55.69 (8.10)	0.31 (0.48)
Tall	53.75 (10.25)	60.63 (6.55)	0.38 (0.50)

AR Agent Embodiment (Kim et al., 2018)



(A) Speech



(B) Speech + Gesture



(C) Speech + Gesture + Locomotion

AR Agent Embodiment (Kim et al., 2018)

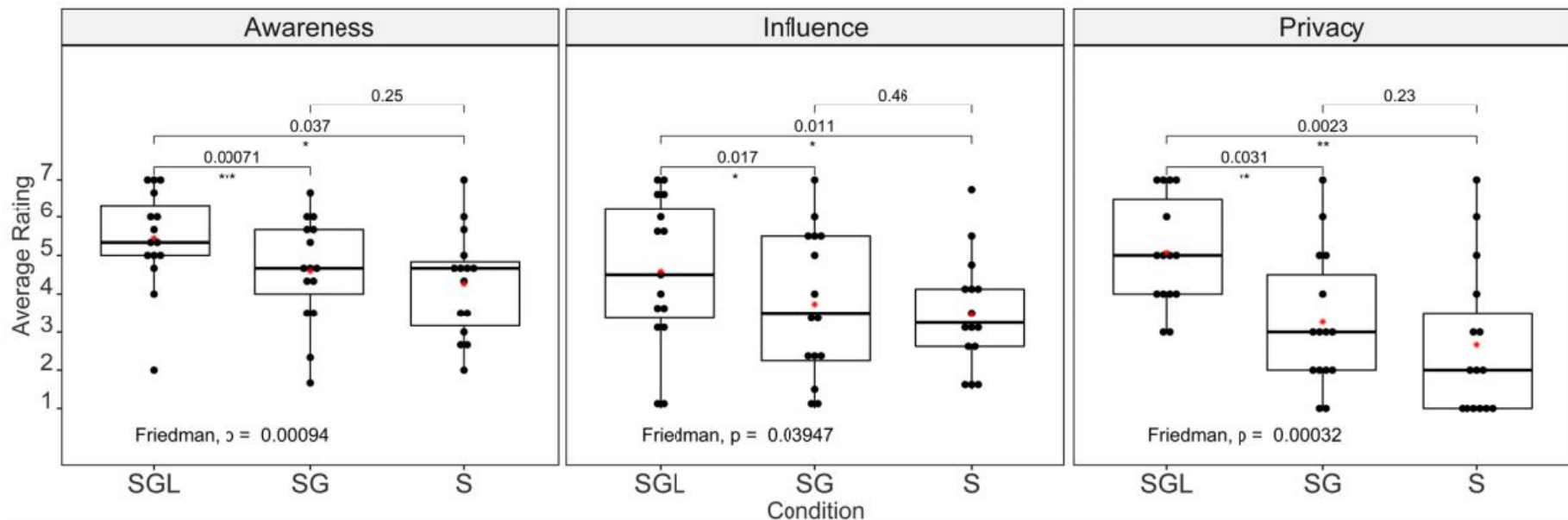
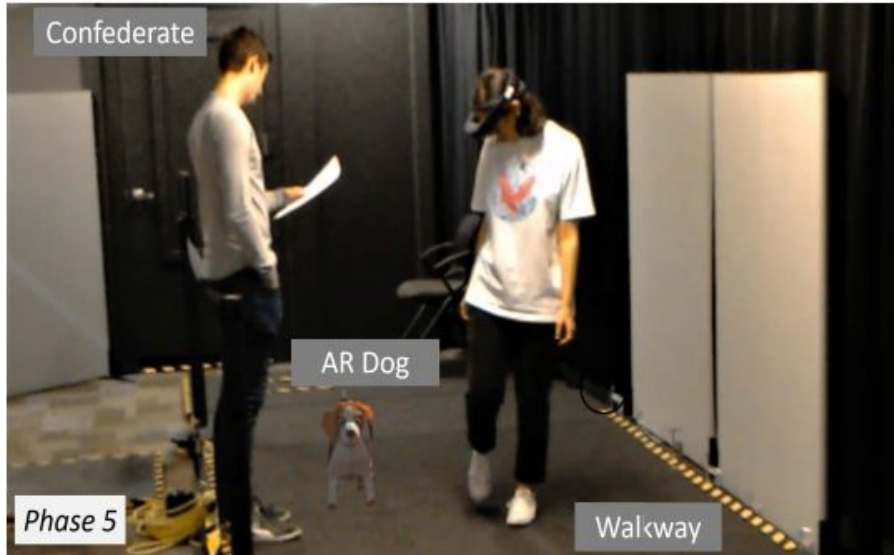
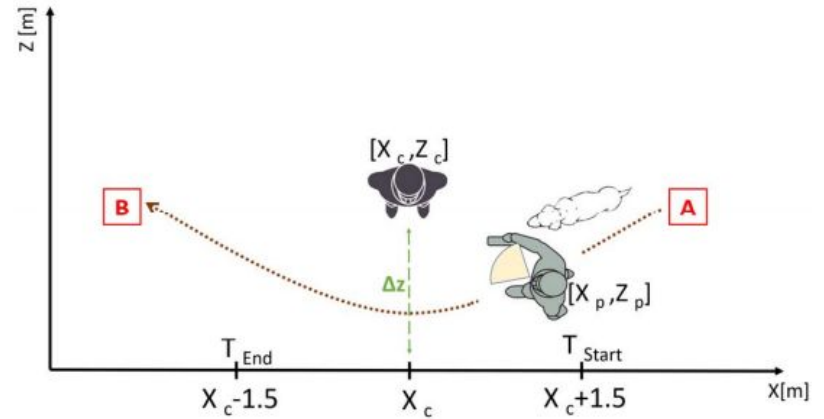


Figure 4: Boxplots of averaged means per participant and subscales of the confidence questions related to *awareness*, *influence*, and *privacy* that were asked during the experiment. Significant differences of the pairwise comparisons are indicated in the plots.

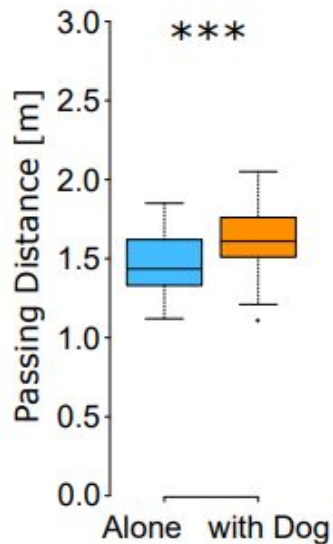
AR Virtual Pet (Norouzi et al., 2019)



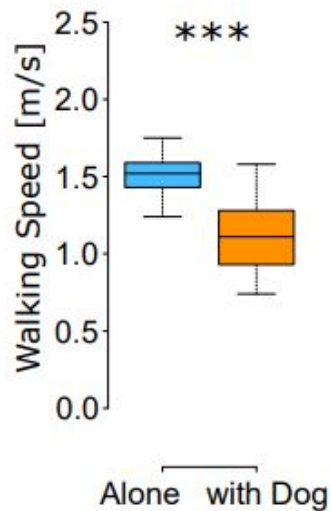
(b) Walking with Dog (Phase 5)



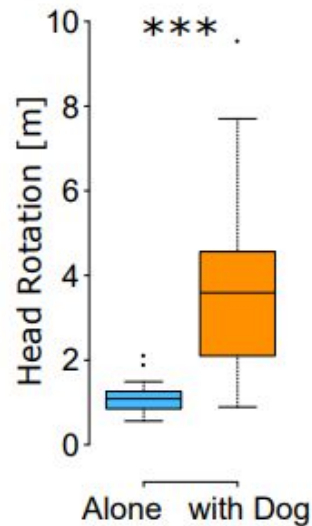
AR Virtual Pet (Norouzi et al., 2019)



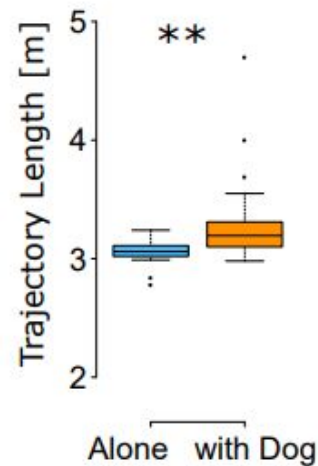
(a)



(b)



(c)



(d)

AR Virtual Pet (Norouzi et al., 2019)

$C_{X,A}$: confederate aware

$C_{X,U}$: confederate unaware

Higher copresence when the confederate was aware of the dog.

Higher affective attraction when the confederate was unaware of the dog.

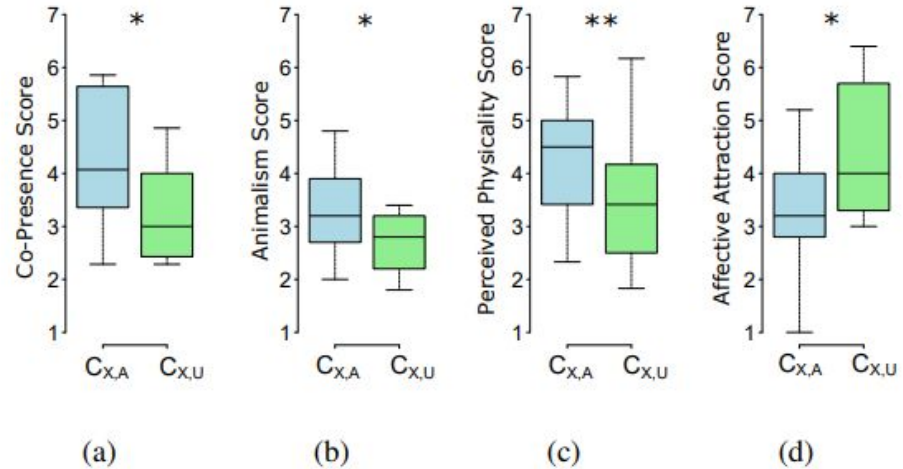


Figure 8: AR animal and confederate perception results: (a) Co-Presence, (b) Godspeed Animalism category, (c) Perceived Physicality, and (d) Affective Attraction. Statistical significance: ** ($p < 0.01$), * ($p < 0.05$).

AR/VR as a Tool for Social Psychology

Manipulation in labs: comes from human experimenters and physical labs

Manipulation in AR/VR: comes from computers with much more precision

While AR/VR benefits from social psychology, the opposite can also be possible.

Example: building an application that contains the experiment setting and running the same experiment in different labs even without a trained experimenter.