DIMENSIONS OF CONGRUITY IN IMMERSIVE VIRTUAL ENVIRONMENTS

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The ability to create a sense of *presence* is the driving ethos for immersive virtual environments, including virtual, augmented, and mixed reality.

CONTENT FEATURES

Affective cues associated with
sadness (Baños et al., 2004) or
anxiety (Bouchard et al., 2008) lead
to higher levels of immersion.

IVEs are different from other media

sensory cues are not processed together with those of the physical environment

LEVELS OF IMMERSION

- *Virtual reality* attempts to present a complete alternative sensory reality

- *Mixed* and *augmented reality* integrate virtual and physical sensory stimuli

While place illusion is about how the world is perceived, the plausibility illusion is about what is perceived. Plausibility is the illusion that what is apparently happening is really happening (even though you know for sure that it is not).

Slater (2009)
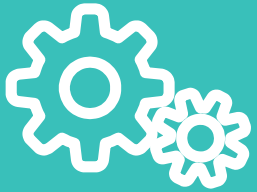
SCHEMATIC ASSOCIATION

Normative understandings of the behavior of objects in the physical world, based on experience

Children form *causal beliefs* by observing the same chain of cause-and-effect over and over again
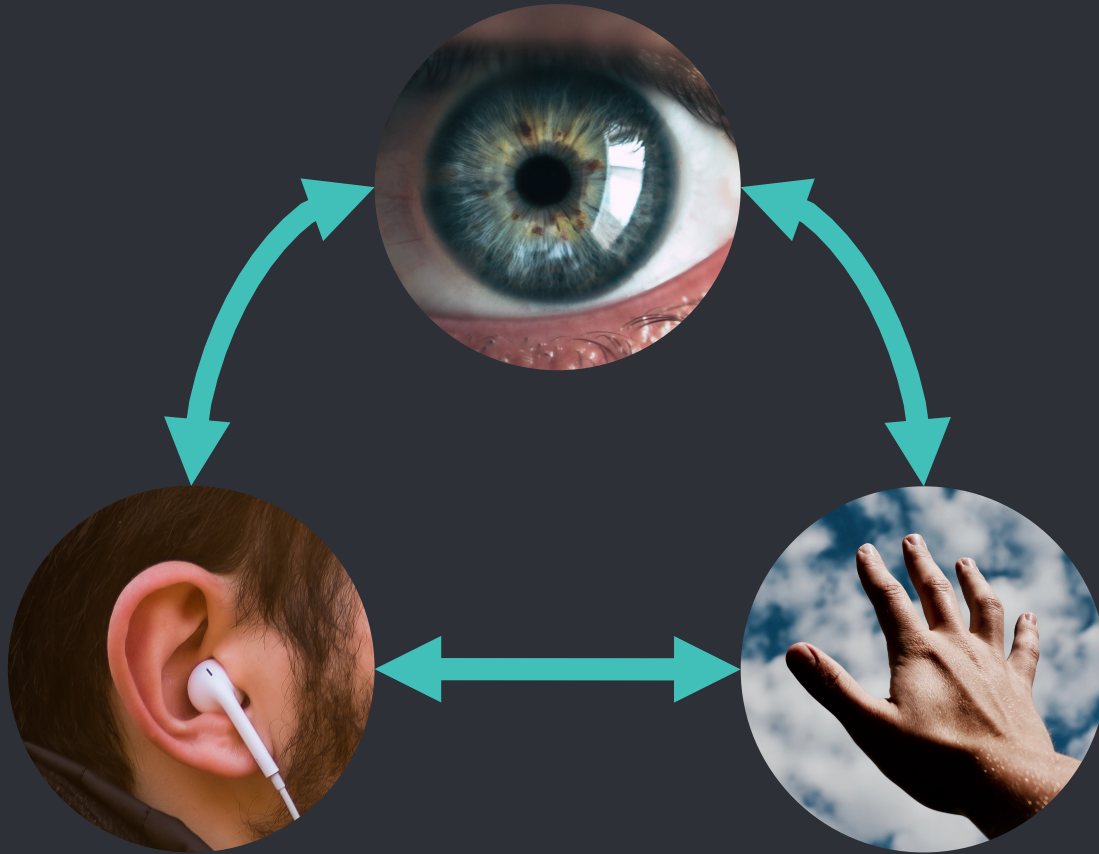
Common-sense understandings of the behavior of physical objects rely on heuristic, probabilistic models (Battaglia, Hamrick, & Tenenbaum, 2013)

CONGRUITY

A function relating two sets of sensory cues in an IVE

Sensory cues of different modalities relating to a single virtual object

Behavior of objects in the virtual world mirrors that of comparable objects in the physical world

Classes of objects have normative internal associations, or *themes*, that bind them together

FROM THE DIRECTOR OF **IRON MAN**

COWBOYS
&
ALIENS

IN THEATERS JULY 29

◦ *Congruity* as a stable framework for experimental studies

◦ *Congruity* as a theoretical bridge between design, psychological, and philosophical perspectives

- The framework is only applicable to IVEs that exclude sensory input from the physical environment

- Assumes that presence is a desirable design outcome

- Open to a range of potential operational definitions

As the technology gap between immersive platforms narrows, theoretical focus must shift towards the content and behavior of IVEs.

ANY QUESTIONS?

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