Presence

Guest Adjunct Prof. Tiago Araújo

tiagodavi70@ua.pt

Material

Mark Billinghurst

https://pt.slideshare.net/marknb00/presentations
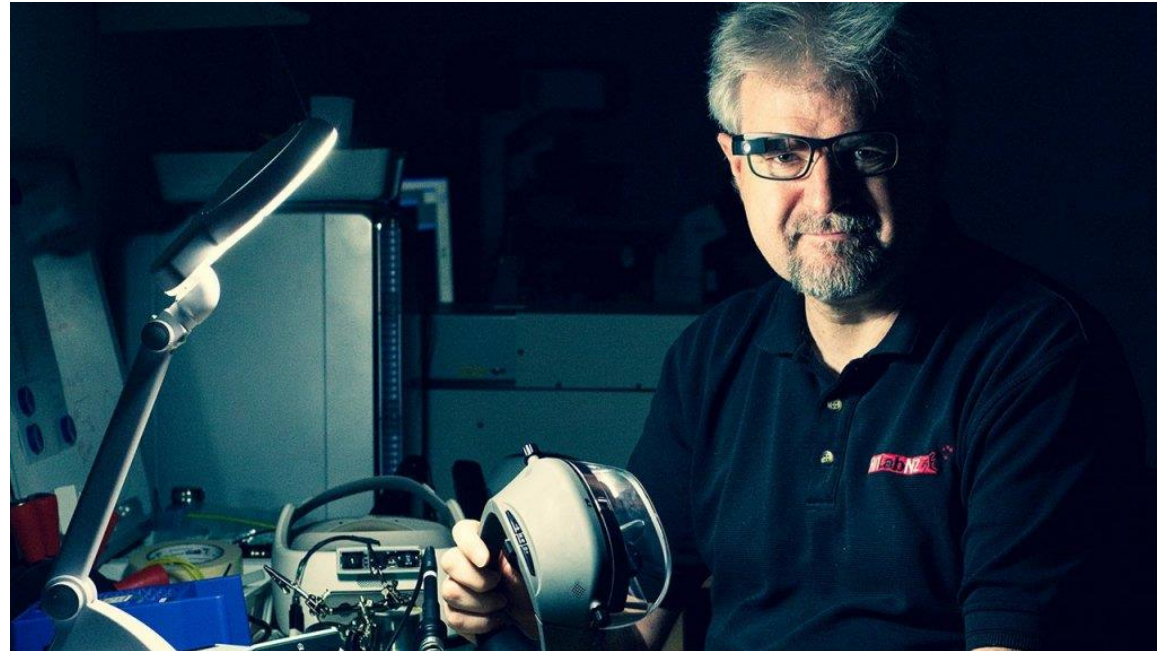
Are We living in a simulation?

https://youtu.be/0cM690CKArQ?si=tzNnCOsev6fEb0b8&t=309

Are We In the Matrix?

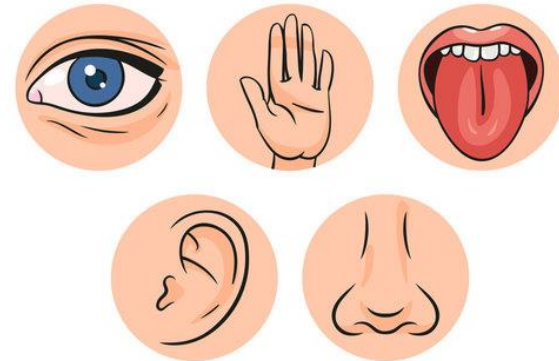https://www.youtube.com/watch?v=aVLexf_dyCM

How do We Perceive Reality?
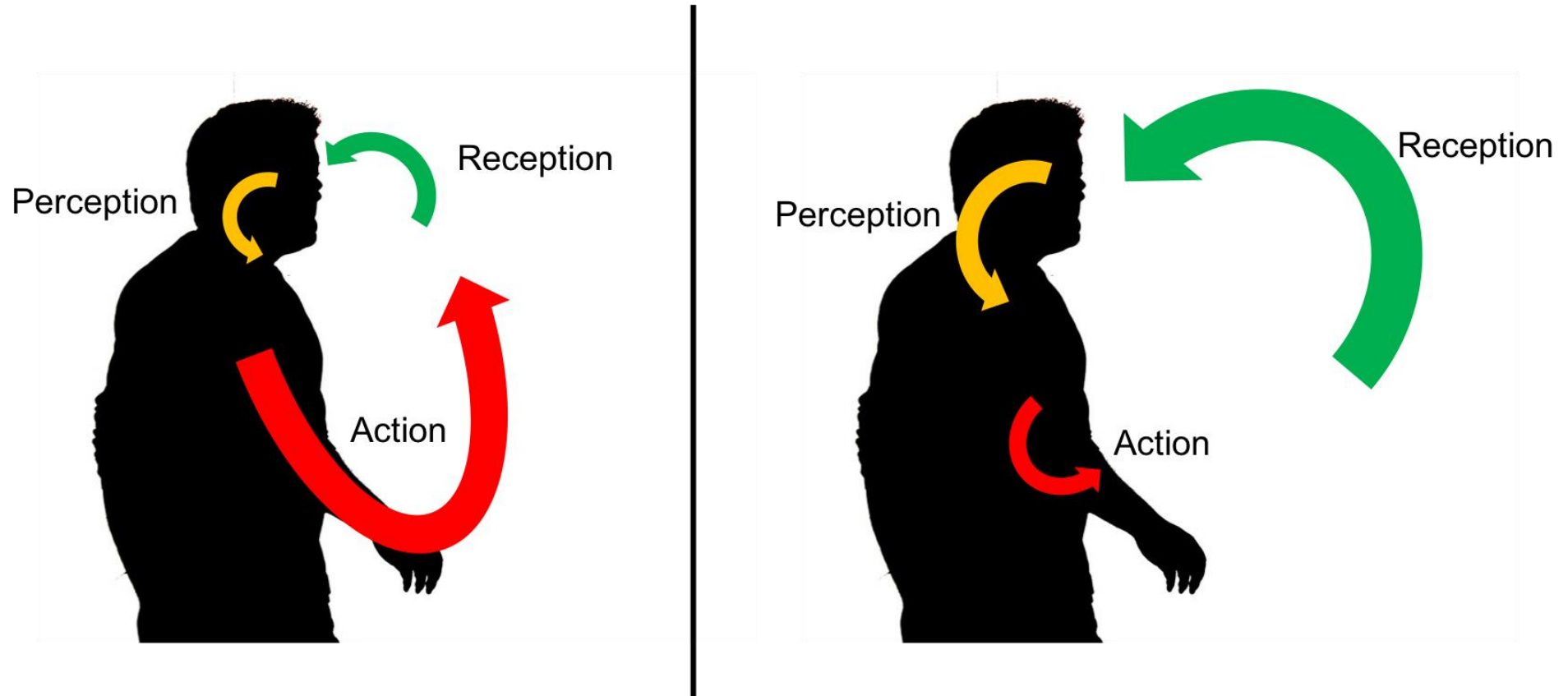
We understand the world through our senses:
- Sight, Hearing, Touch, Taste, Smell (and others..)

Two basic processes:
- **Sensation** – Gathering information
- **Perception** – Interpreting information

Simple Sensing/Perception Model

What is Virtual Reality?

What is Virtual Reality

Virtual reality (VR), the use of computer modeling and simulation that enables a person to interact with an artificial three-dimensional (3-D) visual or other sensory environment.

https://www.britannica.com/technology/virtual-reality

Goal of Virtual Reality

".. to make it feel like you're actually in a place that you are not."
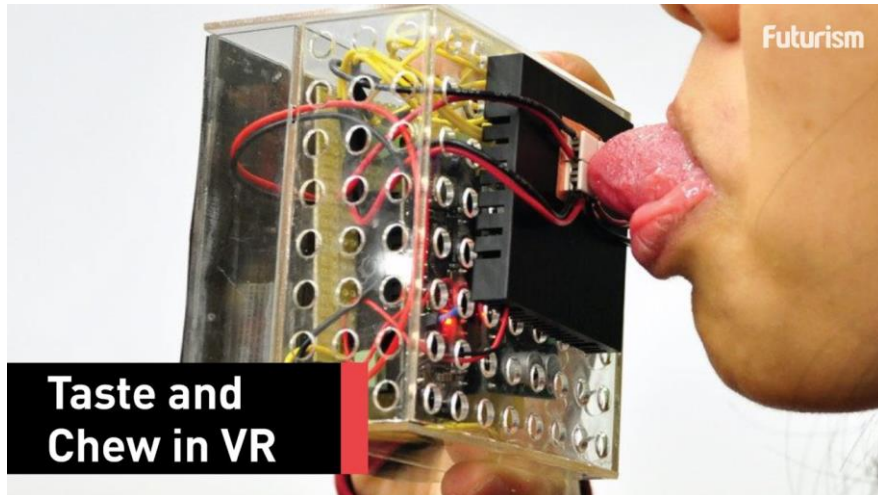
Palmer Luckey

Co-founder, Oculus

Illusion of Reality

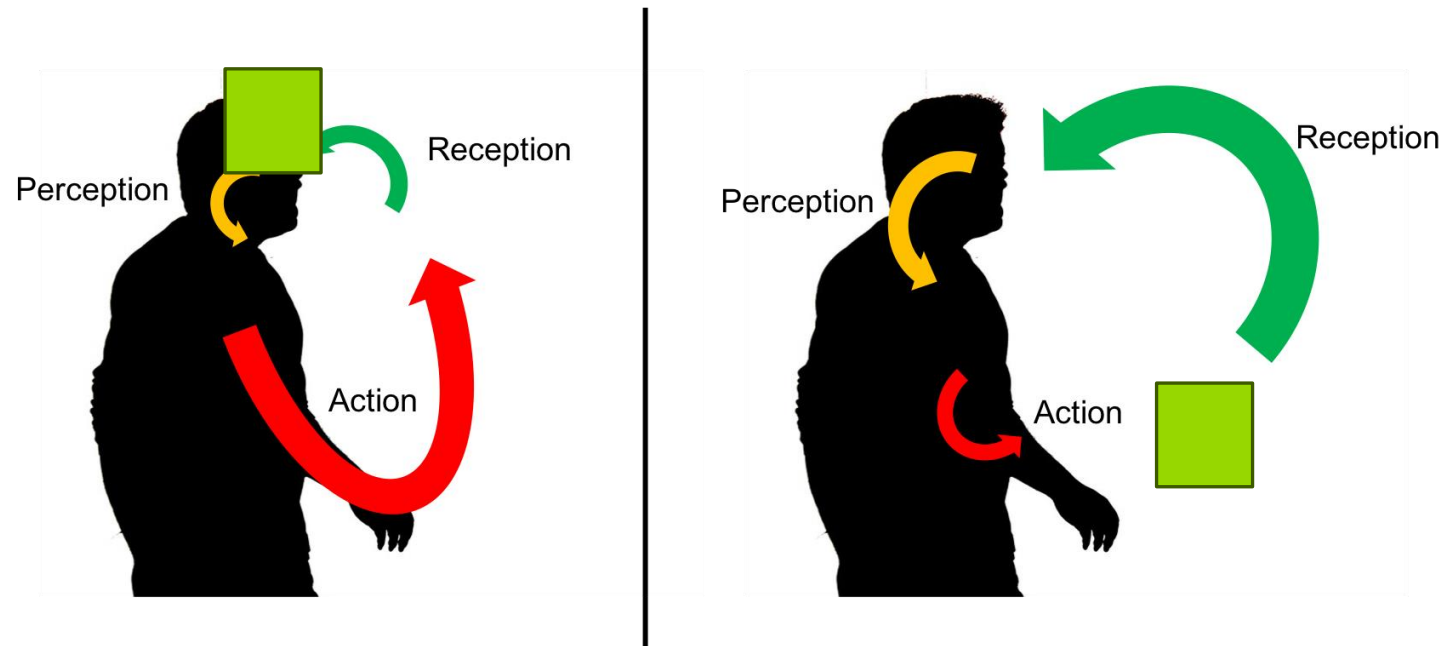Fooling human perception by using technology to generate artificial sensations
- Computer generated sights, sounds, smell, etc

Taste and Chew in VR
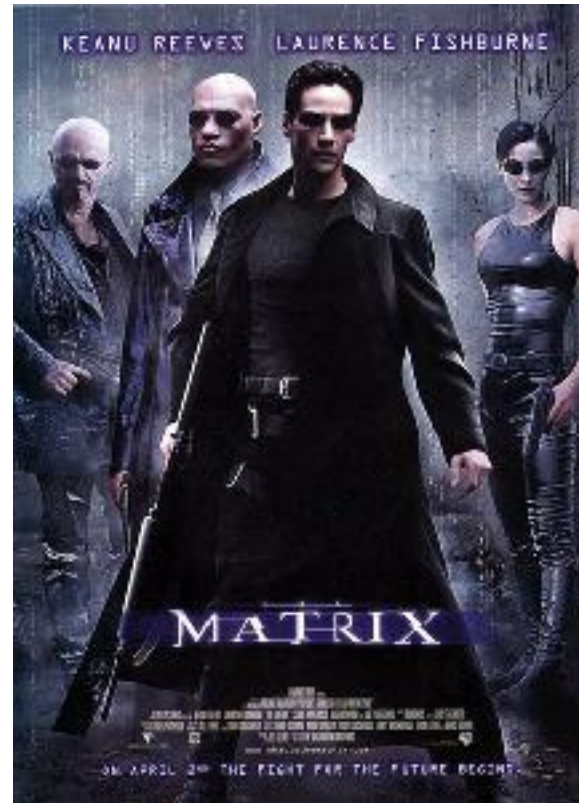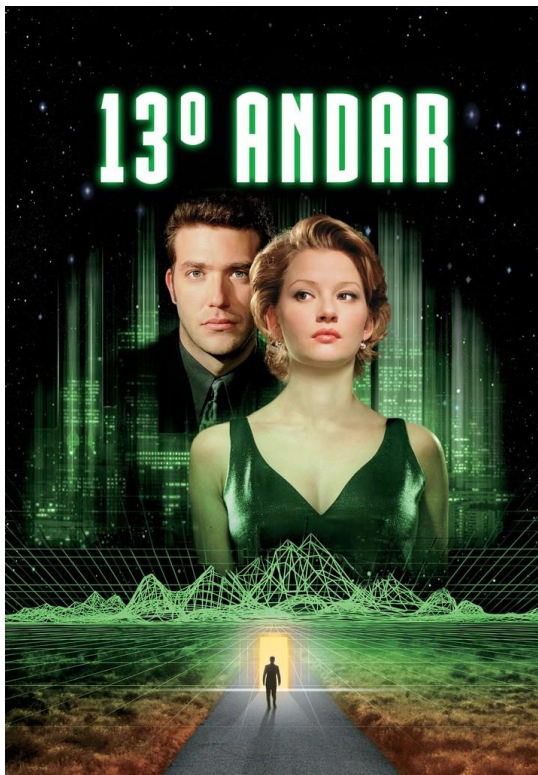
Futurism

Reality vs. Virtual Reality

In a VR system there are input and output devices between human perception and action

Birdly & Virtual Cocoon

Media Presence – The future?

Types of Human Experience

Real

Virtual

Hallucination

Presence Definition

Presence (a shortened version of the term "telepresence") is a psychological state or subjective perception in which even though part or all of an individual's current experience is generated by and/or filtered through human-made technology, part or all of the individual's perception fails to accurately acknowledge the role of the technology in the experience.

International Society for Presence Research, 2000

Metaphysics of Presence

Descartes, Heidegger, Gibson, and God: Toward an Eclectic Ontology of Presence

Thomas B. Sheridan

> Author and Article Information

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Abstract

With regard to "presence" and "reality," the philosophical perspectives of Heidegger and Gibson are commonly seen to be in opposition to those of Descartes. This paper questions the validity of these differences and suggests a framework that would seem to accommodate both perspectives, namely that of engineering estimation theory. In this same regard — and in view of our interest in virtual reality — an ultimate challenge is posed as an exercise: how to treat the "presence" and "reality" of God.

Or simply…

The subjective experience of being in one place or environment even when physically situated in another

Immersion vs. Presence

Immersion: describes the extent to which technology can deliver a vivid illusion of reality to the senses of a human participant.

Presence: a state of consciousness, the (psychological)sense of being in the virtual environment. So, Immersion, defined in technical terms, can produce a sensation of Presence

Three Dimensions of Presence

Personal Presence, the extent to which the person feels like he or she is part of the virtual environment;

Social Presence, the extent to which other beings(living or synthetic) also exist in the VE;•

Environmental Presence, the extent to which the environment itself acknowledges and reacts to the person in the VE.

Benefits of High Presence

Leads to greater engagement, excitement and satisfaction
- Increased reaction to actions in VR

People more likely to behave like in the real world
- E.g. people scared of heights in real world will be scared in VR

More natural communication (Social Presence)
- Use same cues as face-to-face conversation

Measuring Presence

Subjective

Objective

How to Create Strong Presence?

Use 3 Dimensions of Presence
- Create rich multi-sensory VR experiences
- Include social actors/agents that interact with user
- Have environment respond to user

What Influences Presence
- Vividness – ability to provide rich experience
- Using Virtual Body – user can see themselves
- Internal factors – individual user differences
- Interactivity – how much users can interact
- Sensory, Realism factors

Guidelines

Factors	Guideline
Ease of Interaction	Provide seamless interaction such that users can readily orient in, traverse in, and interact with the virtual environment.
User-initiated control	Provide immediacy of system response, correspondence of user-initiated actions, and a natural mode of control.
Pictorial Realism	Provide continuity, consistency, connectedness & meaningfulness in presented stimuli.
Length of Exposure	Provide sufficient exposure time to provide VE task proficiency, familiarity with the VE, and sensory adaptation.
Social Factors	Provide opportunities to interact with and communicate with others verbally or by gestures. Provide confirmation that others recognize one's existence in the VE.
Internal Factors	Identify the types of individuals who will use a VE system and their preferred representational system (i.e., visual, auditory, kinesthetic).
System Factors	Providing stereopsis, head-tracking, a large field of view, increasing update rates, multi-modal interaction, and ergonomically sound sensors/ effectors facilitate presence.