

# COMP210: Interfaces & Interaction

## 3: Presence

# Learning outcomes

- ▶ Outcome 1
- ▶ Outcome 2
- ▶ Outcome 3

"We see things not as they are, but as we are - that is, we see the world not as it is, but as moulded by the individual peculiarities of our mind"

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Reality is malleable.

Our point of view is inseparable from our understanding of reality.



Figure: The Lawn Mower Man - 1992

# Duck Test

“a colloquial name for a method of testing if an experienter has reached a state of presence, by monitoring their behaviour when threatened by a virtual object”

- VRGlossary.org

This could have an adverse effect if the experienter realises that there is no actual risk - Presence is then broken.

# Presence (again)

'Presence is the psychological state of 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

(ISPR Website)



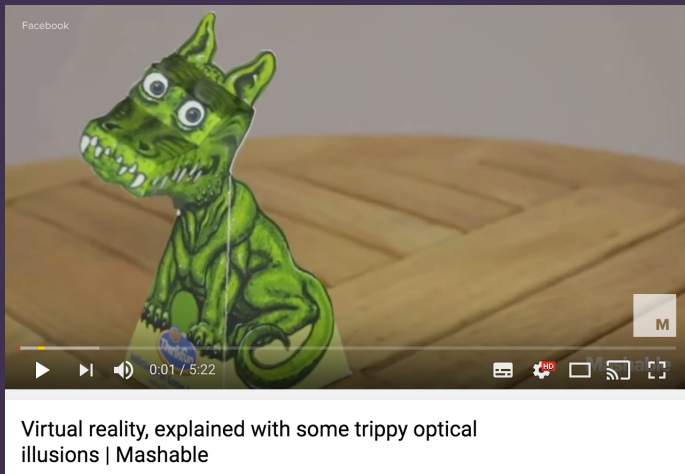


Figure: Michael Abrash, the chief scientist for Facebook's Oculus

# Misdirection

“That which directs a spectator away from the method and towards the effect”

Curtis Hickman - Magician & founder of THE VOID.

TRUTH/REALITY > GUIDED PERCEPTION > LIE/FANTASY

LINK

# Illusions

V/AR are illusion based experiences

There are four main components to this illusion:

- ▶ the stable spacial place,
- ▶ self-embodiment,
- ▶ physical interaction & ,
- ▶ social communication.

# The Uncanny Valley

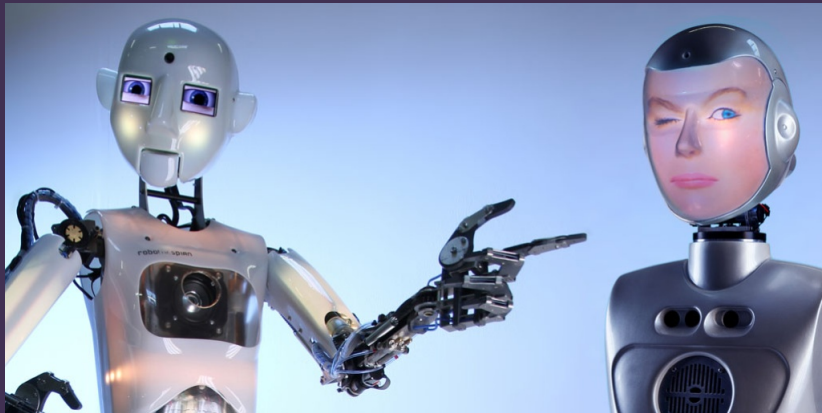


Figure: Engineered Arts - Penryn

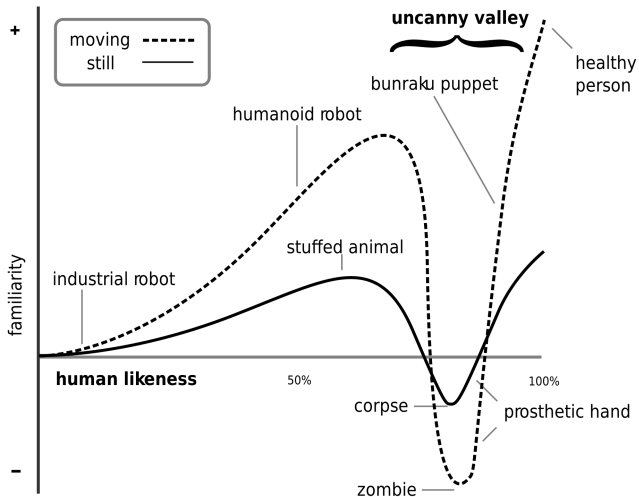


Figure: Masahiro Mori -

# Fidelity Continua

The notion of the uncanny valley applies to aspects of VR as well. These components have been defined as the Fidelity Continua.

- ▶ **Representation** fidelity - Hyper-realistic to abstract and non-objective worlds.
- ▶ **Interaction** Fidelity - Degree to which a interaction in VR corresponds with the same interaction in the real world.
- ▶ **Experiential** Fidelity - The degree to which the user experience matches the intentions of the VR creator. Procedural worlds have a very low experiential fidelity.

What do we want from V/AR?

Some aim to recreate reality to the highest fidelity.

Others seek to surpass it.

# Perception



# Objective vs. Subjective Reality

# Human-Centred Design

# Gestalt Psychology

Gestalt = Configuration (roughly)

# Sensory Substitution

Sensory substitution is the replacement one sensory cue that is not yet able to be simulated with one that is.

- ▶ Ghosting - showing the user a second version of a virtual object.
- ▶ Highlighting - Visual signifiers that convey a sense of interactivity with an object.
- ▶ Audio cues - Useful for identifying collisions with virtual objects.
- ▶ Passive haptics - Real world reference frames meet virtual reference frames to help a user navigate a space.
- ▶ Rumbles/sub packs - Again, used to portray a collision with virtual objects.

# Redirected Walking

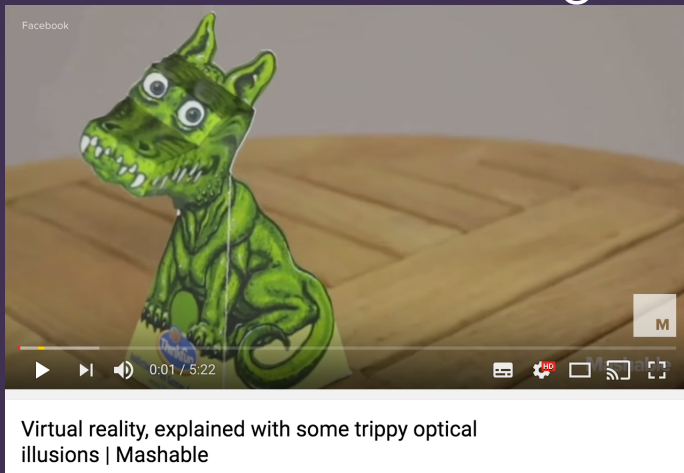


Figure: Michael Abrash, the chief scientist for Facebook's Oculus