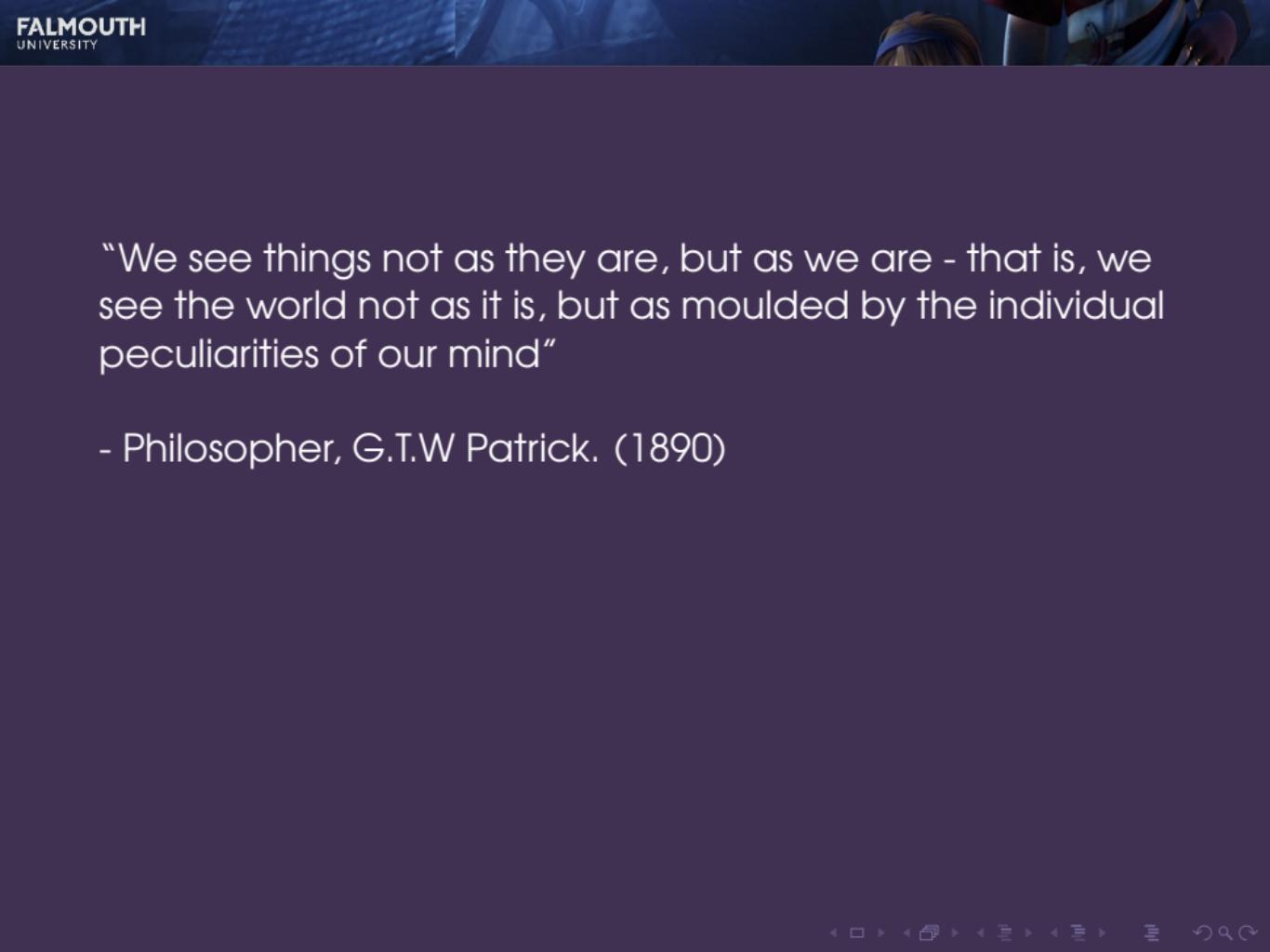




COMP210: Interfaces & Interaction
3: Presence

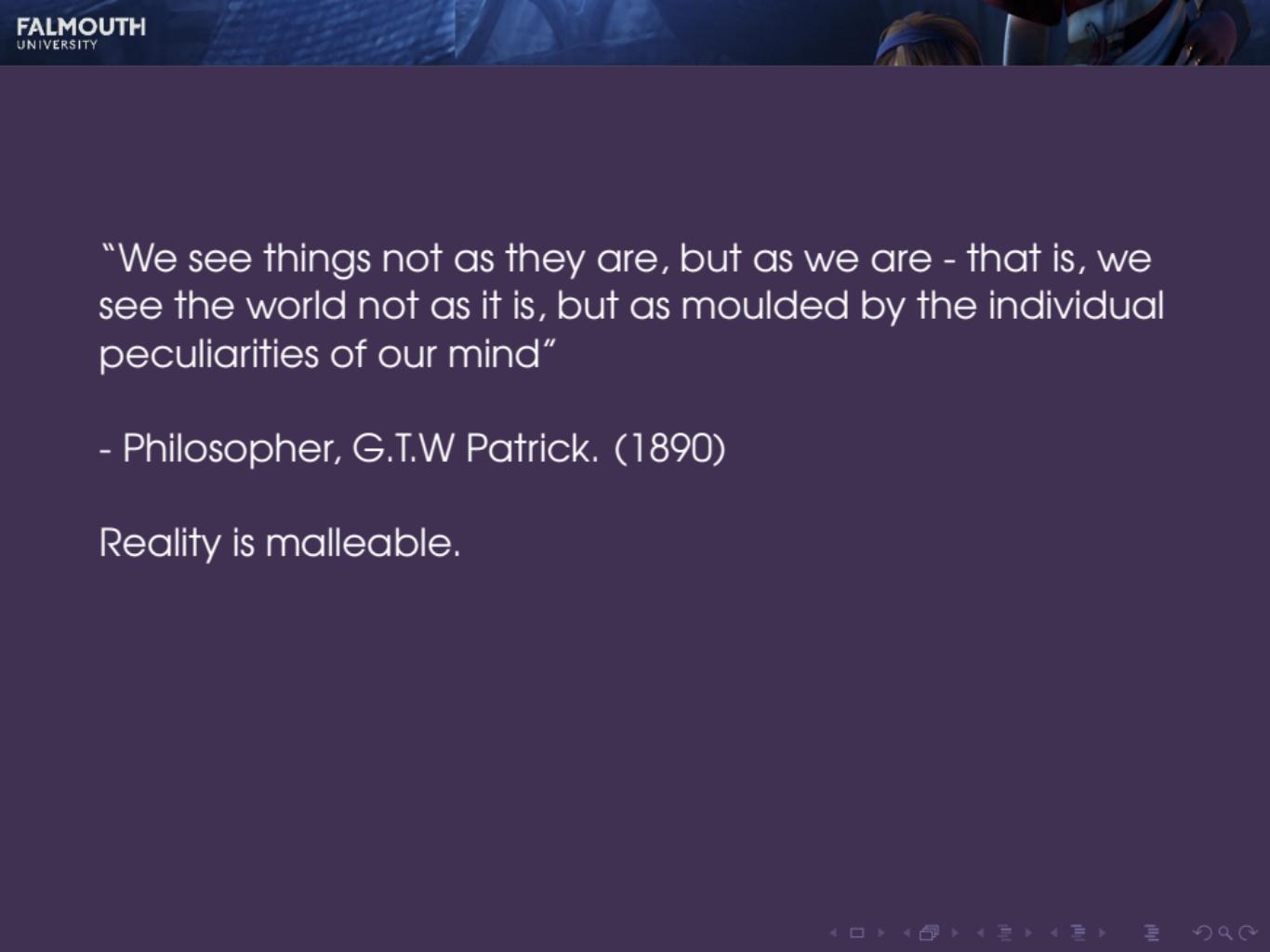
Learning outcomes

- ▶ 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”

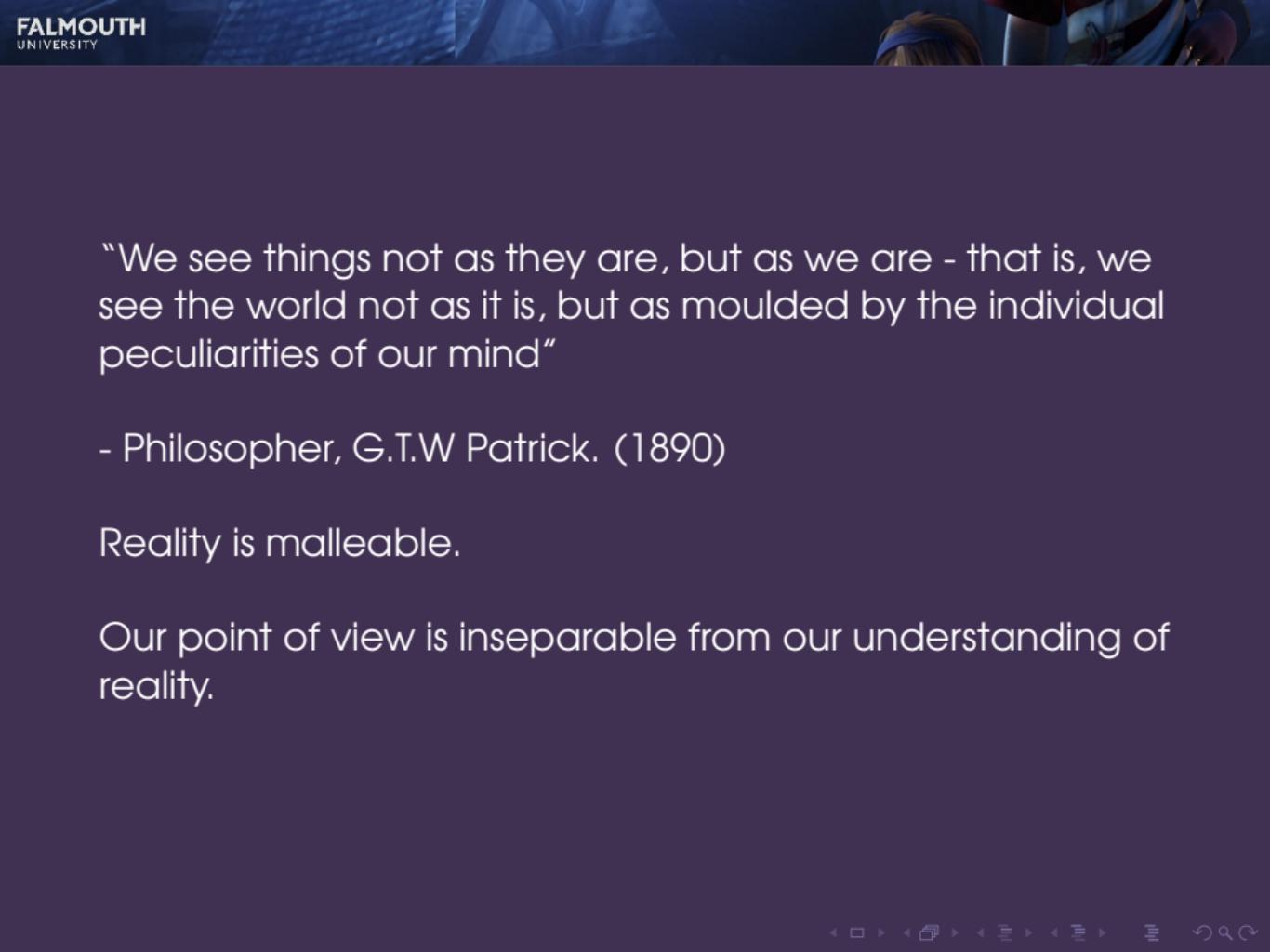
- Philosopher, G.T.W Patrick. (1890)



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Reality is malleable.



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- Philosopher, G.T.W Patrick. (1890)

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 experiencer 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 experiencer 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

Activity

Who can find the best optical illusion?

Post results to Slack

Types of Illusion

- ▶ Boundary Completion
- ▶ Blind Spot (link to eye)
- ▶ Depth Illusions - Trompe-l'œil
- ▶ Afterimage
- ▶ Motion Illusions - Watch these in VR as they cause motion sickness.

Gestalt Psychological factors

Gestalt = Configuration (roughly)

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.

Sensation vs. Perception



Sensation - Lower level recognition of stimuli.

Perception - Higher level processing that combines information from the senses, filters it, organises it then interprets it to create **subjective**, conscious experience.

Reality is Subjective

By this point we are starting to get a sense that what we perceive is not necessarily.

Reality is Subjective

By this point we are starting to get a sense that what we perceive is not necessarily.

If reality is subjective what does this actually mean?

Iterative Processing

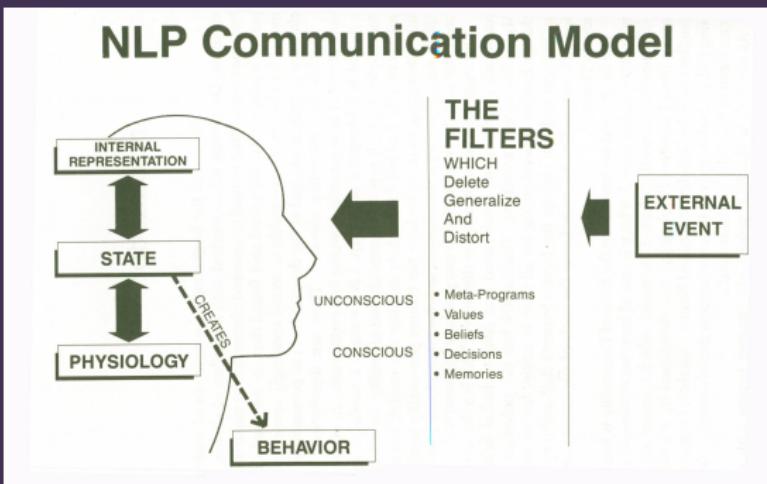


Figure: Neuro-Linguistic Programming (NLP) - Communication Model

The Uncanny Valley

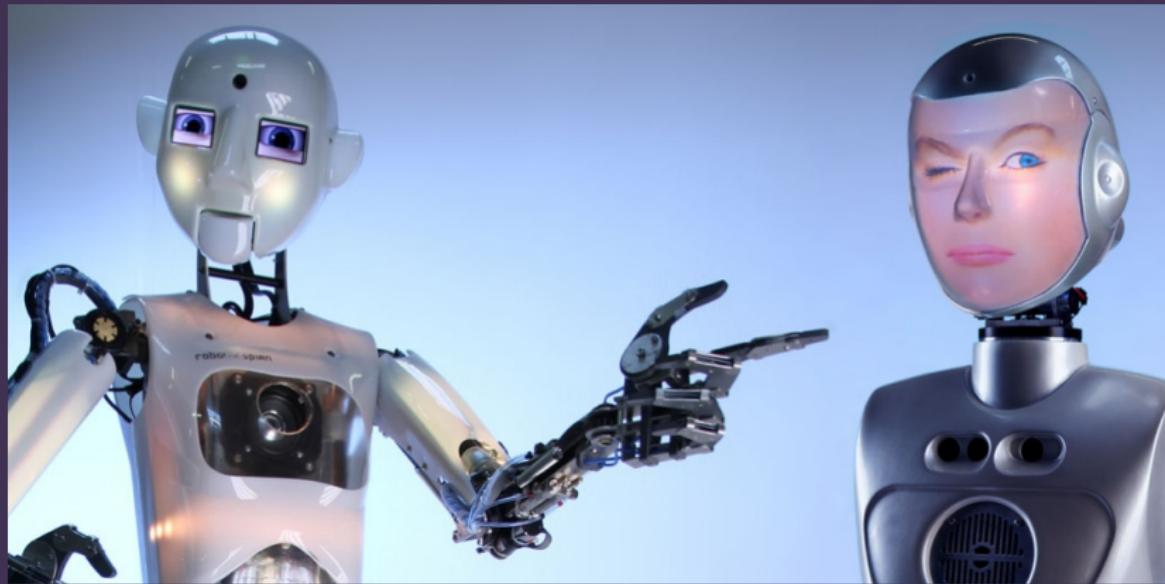


Figure: Engineered Arts - Penryn

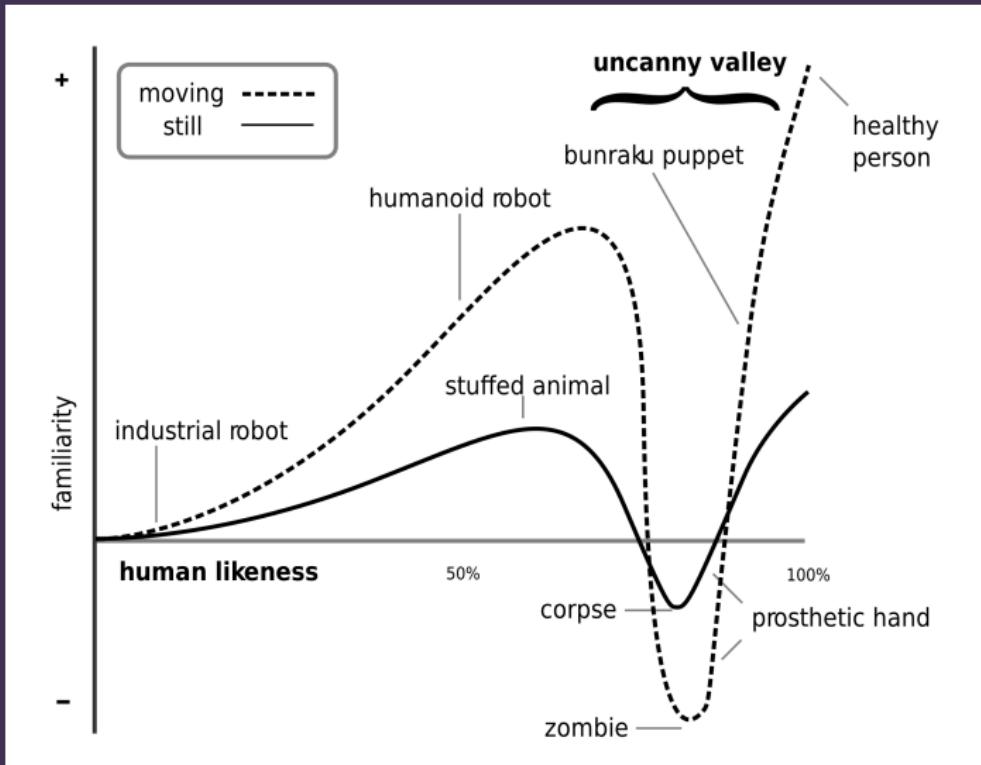


Figure: Masahiro Mori -

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.

A dark blue background image showing a close-up of a person's face wearing a virtual reality headset. The person has blonde hair and is looking slightly to the side. The image is partially visible at the top of the slide.

What do we want from V/AR?

Some aim to recreate reality to the highest fidelity.

Others seek to surpass it.

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

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

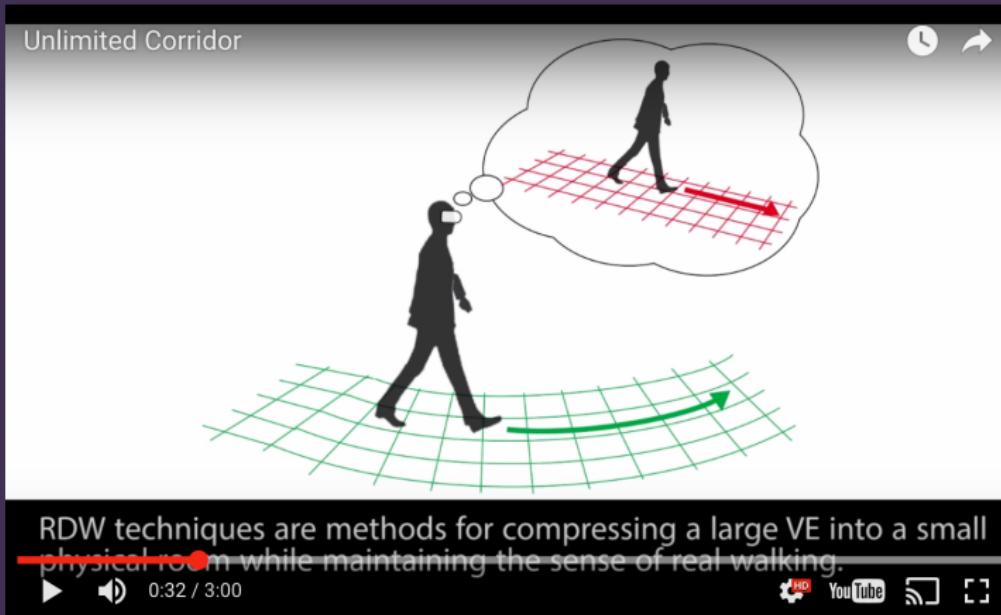


Figure: “HUMANS, QUITE SIMPLY, suck at walking in straight lines”
- Wired Magazine

unconscious competence