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The Importance of Vestibular and Proprioceptive Signals on Perspective-Taking

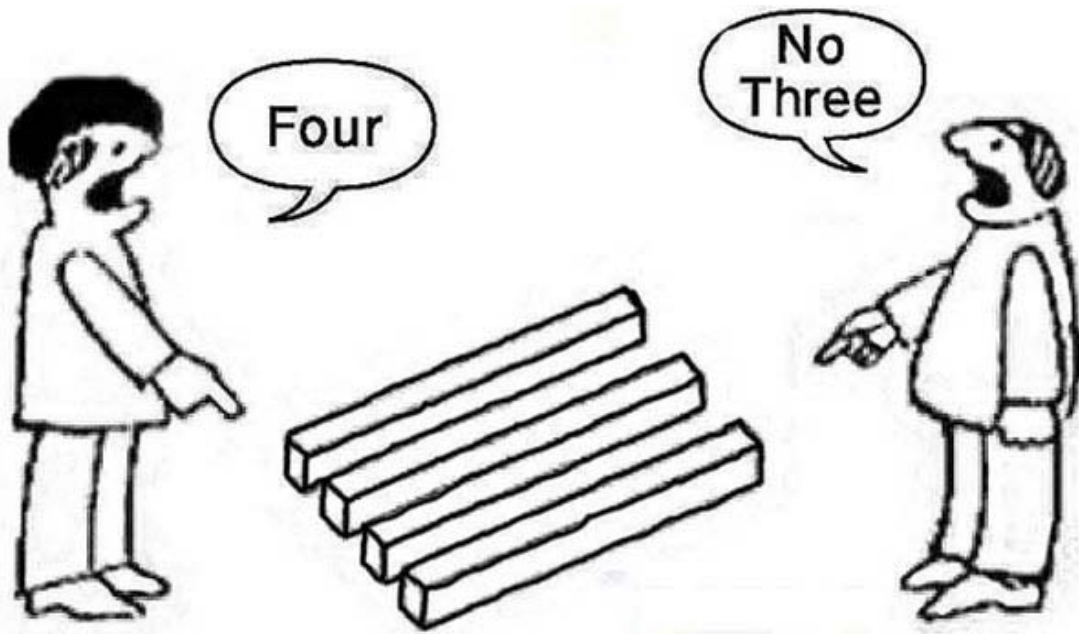Dagstuhl seminar

"On-Body Interaction: Embodied Cognition Meets Sensor/Actuator Engineering to Design New Interfaces"
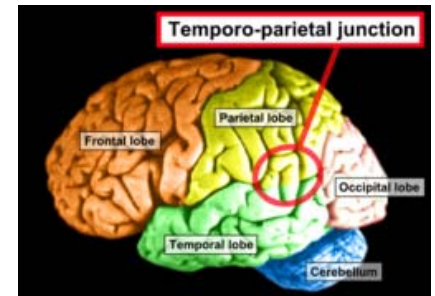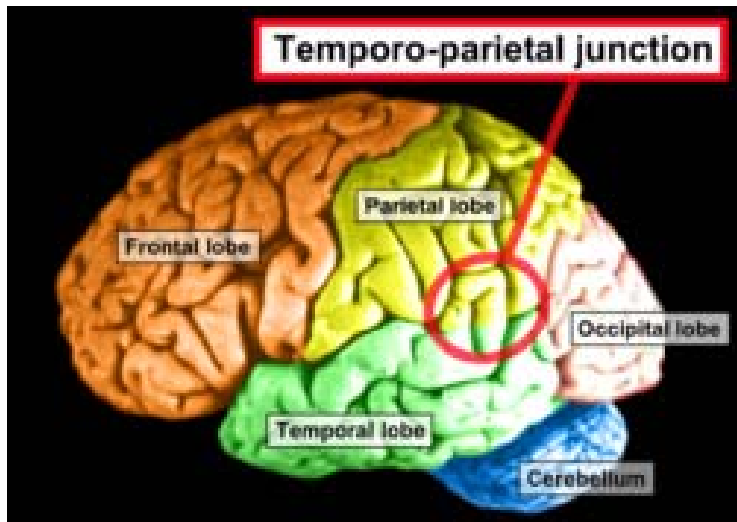
May 21-24, 2018

Four

No Three

Implicit third person perspective taking

Taking place

Temporo-parietal junction

Parietal lobe

Frontal lobe
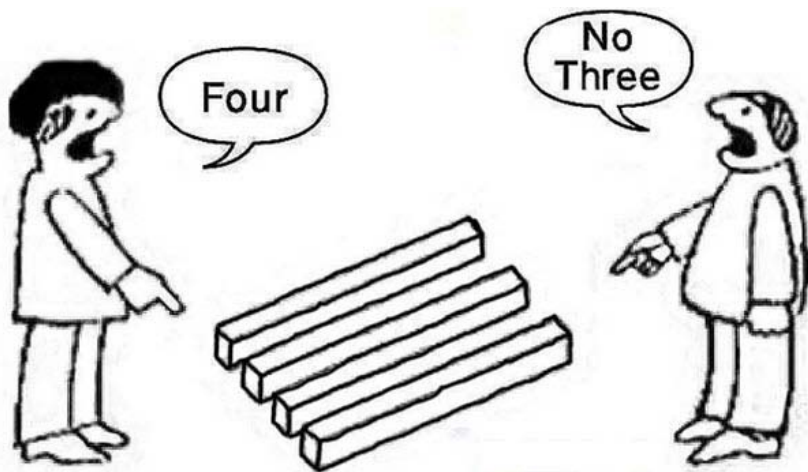
Occipital lobe

Temporal lobe

Cerebellum

https://en.wikipedia.org/wiki/Temporoparietal_junction

Temporo-parietal junction

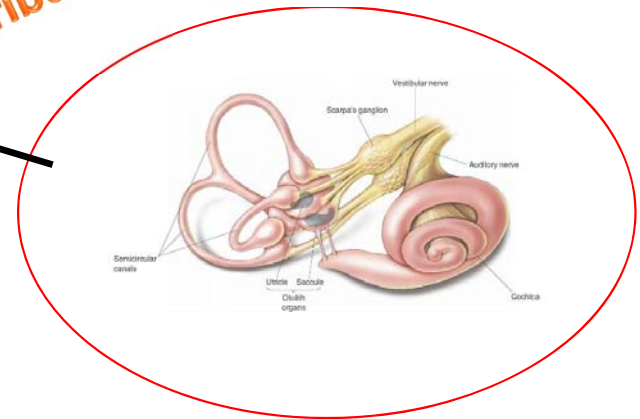Frontal lobe

Parietal lobe

Occipital lobe
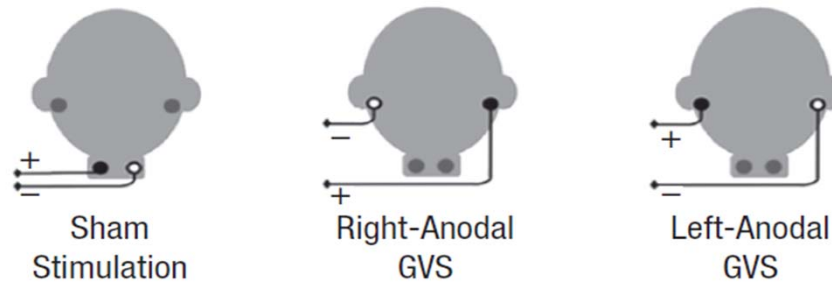
Temporal lobe

Cerebellum

Receives input from multiple sources
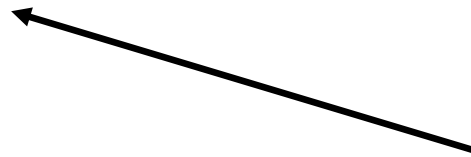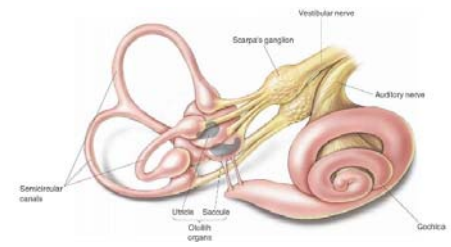
Vestibular contributions

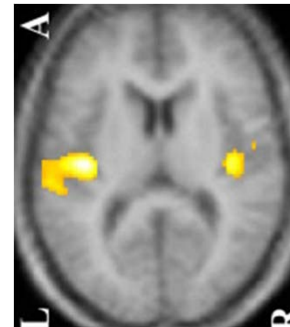# Galvanic Vestibular Stimulation
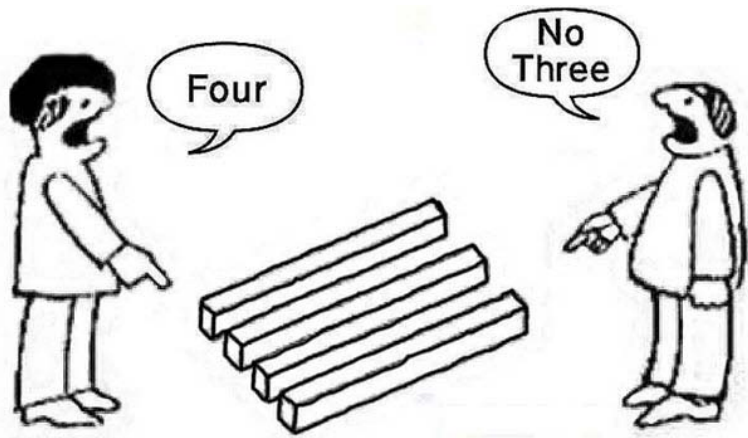

Sham Stimulation

Right-Anodal GVS

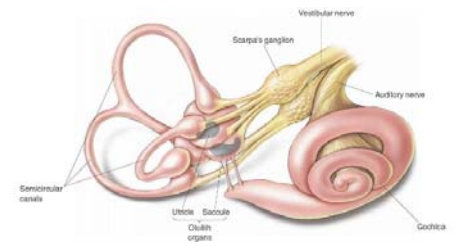Left-Anodal GVS

Left-anodal GVS activates the right hemisphere
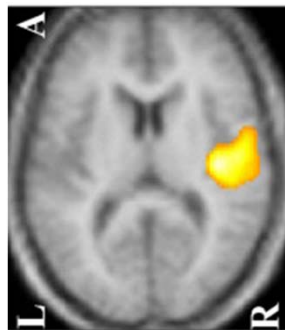
Right-anodal GVS predominantly activates left hemisphere

Adapted from Fink et al., 2003

Somatosensory contributions

Changing the Body Posture of the Participant

- To match or mismatch that of an avatar in a visual scene

Matching Body Posture

Mismatching Body Posture

The task

- Does the number at the start of the trial match the number of balls you see?

The avatar or arrow in the scene is not relevant to the task