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- Friday, March 14, 2008  
Perspectives on (dis-)orientation

In this talk I discuss some of the research I have been involved in at York examining both object orientation and self orientation judgements. Object- and self-orientation judgments provide fundamental cues to a wide variety of perceptual tasks, from perception of distortions in faces to object recognition. Research into self-orientation judgements: knowing your own orientation relative to gravity has been looked at in the York Tumbling room. Observers in the Tumbling Room can experience the 'Levitation Illusion' (Howard, Jenkin & Hu, 2000) in which they feel themselves upright while they are supine relative to gravity. A range of factors influence the incidence of the Levitation Illusion; field of view, dynamic motion of the observer, and the observer's age. The Levitation Illusion is an example of spatial disorientation -- an effect that is often associated with work in microgravity. Disorientation in space was investigated on a shuttle mission in 1998 (STS-90) in which a number of probes were used to explore the factors that influence self-orientation judgements and the perception of up. Building upon this work a new method (OCHART) was developed to examine how the relative weightings of vision, body sense and gravity are combined to determine the direction of up (Dyde, Jenkin & Harris, 2006). OCHART has now been used in many studies including: physically changing the orientation of the observer with respect to gravity, placing the observer under different gravity conditions (parabolic flights), and ongoing work on the International Space Station and long-term bedrest participants investigates the effect of long term shifts in gravity cues on the perception of up.

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