

# Virtual Reality and its Application to Healthcare

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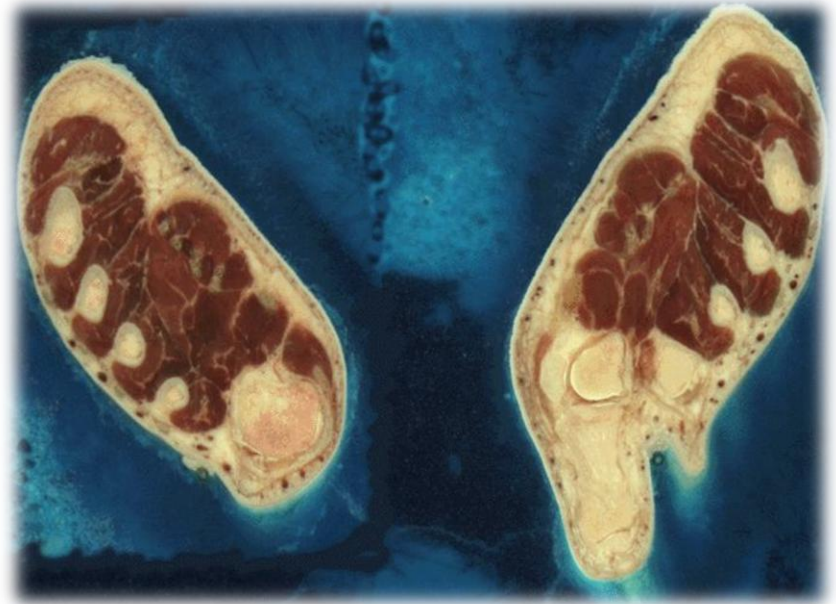
A decorative graphic consisting of several horizontal lines of varying lengths and colors (teal, white, and light blue) extending from the right side of the slide.

# What is virtual reality?

- ‘virtual reality (VR) is a sophisticated computer technology that puts the body into an intense and direct feedback loop with a simulation’ (Hayles 1993, 167).

# Virtual Anatomy - the Visible Human Project

Sample images available from:  
<http://www.nlm.nih.gov/research/visible/>



# Applications of virtual reality in healthcare?

- Training
  - Safety – broadly defined
  - Learning – learning from mistakes, ‘permission to fail’
  - Practicing psychomotor skills → automation
- Assessment
- Surgical Rehearsal
  - Practicing procedures, esp. minimally invasive surgery
  - Practicing procedures on patient-specific model
  - Modelling ‘results’ of the procedure
- Robotic or remote surgery
- Treatment of phobias

(Satava 2008)

## Other issues of interest to social scientists?

- Ways of knowing about the body
- Representations of the body
- Constructions of the human subjects, normalcy/pathology
- Constructions of the medical professions and expertise
- VR open to analysis of the underlying values and understandings of the body and of medical practice (Johnson 2005)

# The 'mathematical body' (Prentice 2005)

- The body must become mathematical in order to inhabit the computer
- Interdisciplinary collaboration
- Implicit, tactile and kinaesthetic knowledge quantified

# What is realism in this context?

- Faithful replication of anatomy
- All-seeing, infinitely mobile eye
  - 'unreal' angles
- 'Authentic' data
- 'Real' instruments
- 'Realistic' sensations
- Isolated body parts