

Visual Field Immersion: The Holodeck Comes Alive (2)

**Professor Maureen J. Simmonds PT,
PhD**

**Director, School of Physical and
Occupational Therapy,**

**Research Director, Pain, Mind and
Movement Research Lab**

**Associate Dean (Rehabilitation),
Faculty of Medicine,**

McGill University, Montreal, Canada



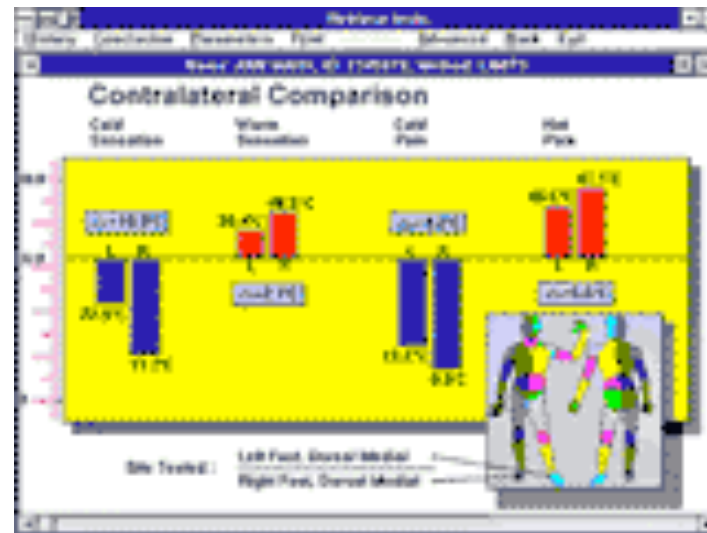
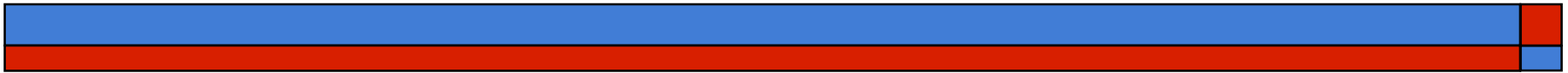
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Post stroke Pain

- Is the mechanism of pain relief
 - Distraction from pain vs. attention to the environment.
 - Does the environment matter
 - i.e. is burning pain aggravated by a hot environment?
 - Or is cold allodynia aggravated by a cold environment
 - Does the pain matter (experimental vs clinical)
 - Does VR decrease pain AND increase function?

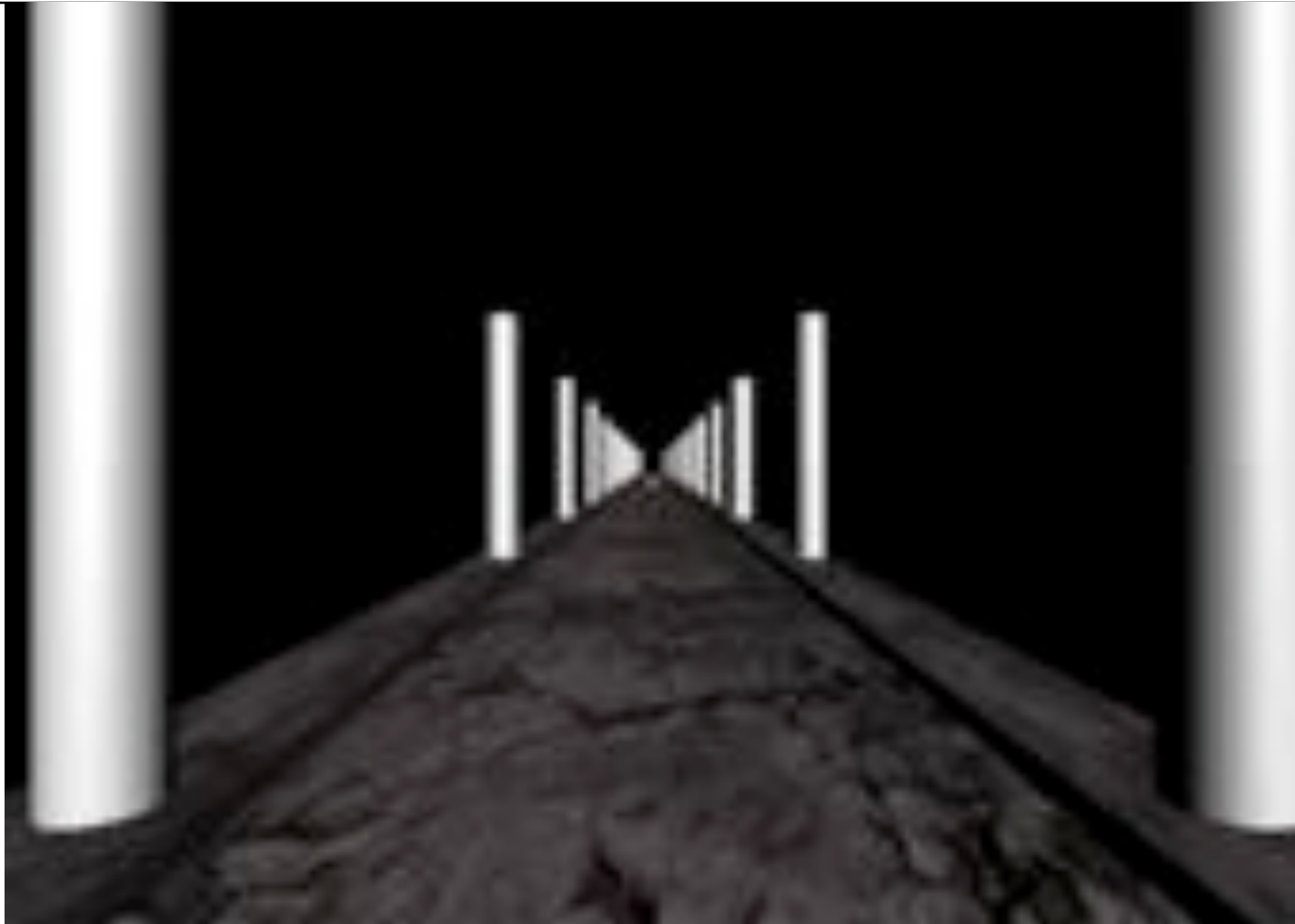


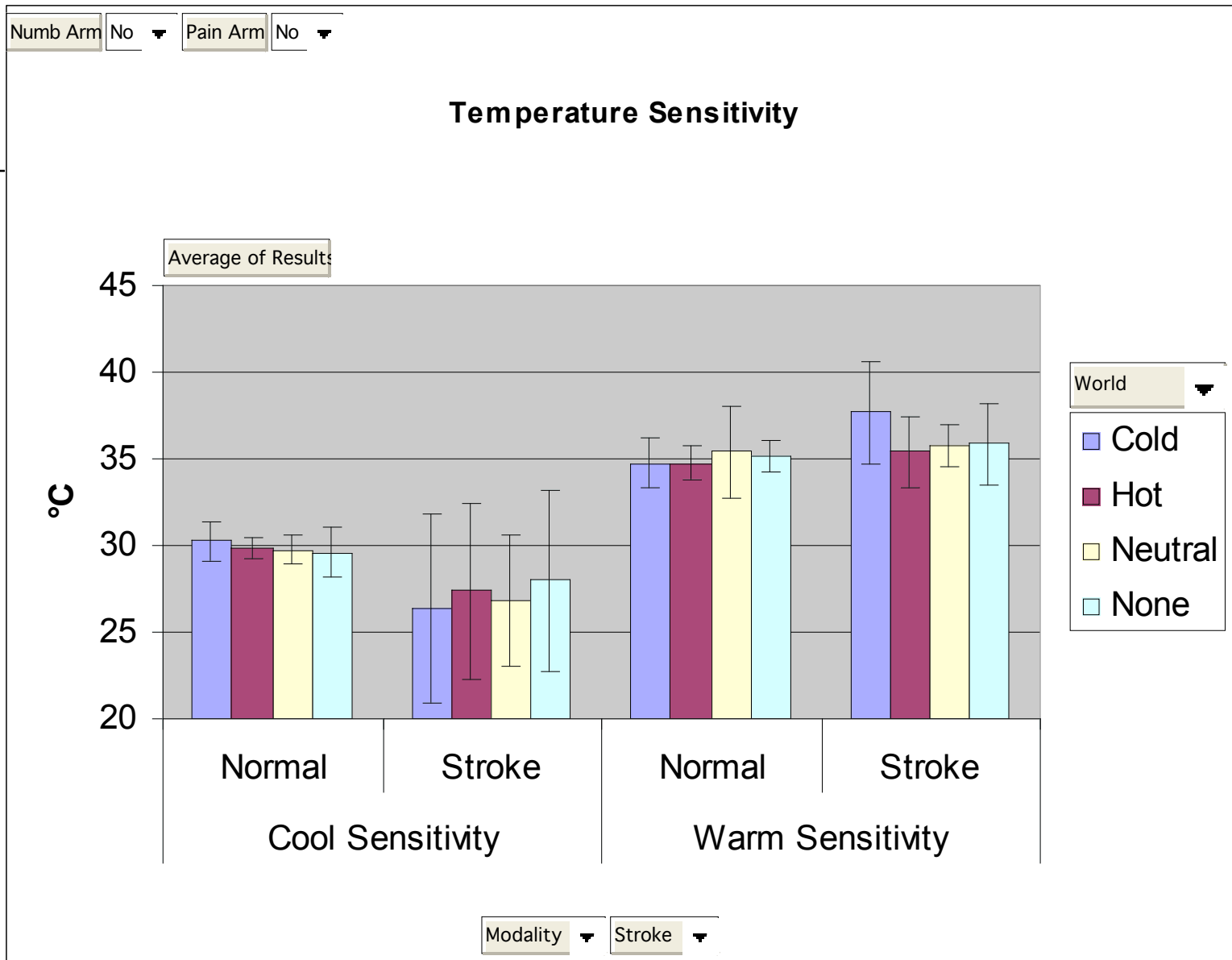


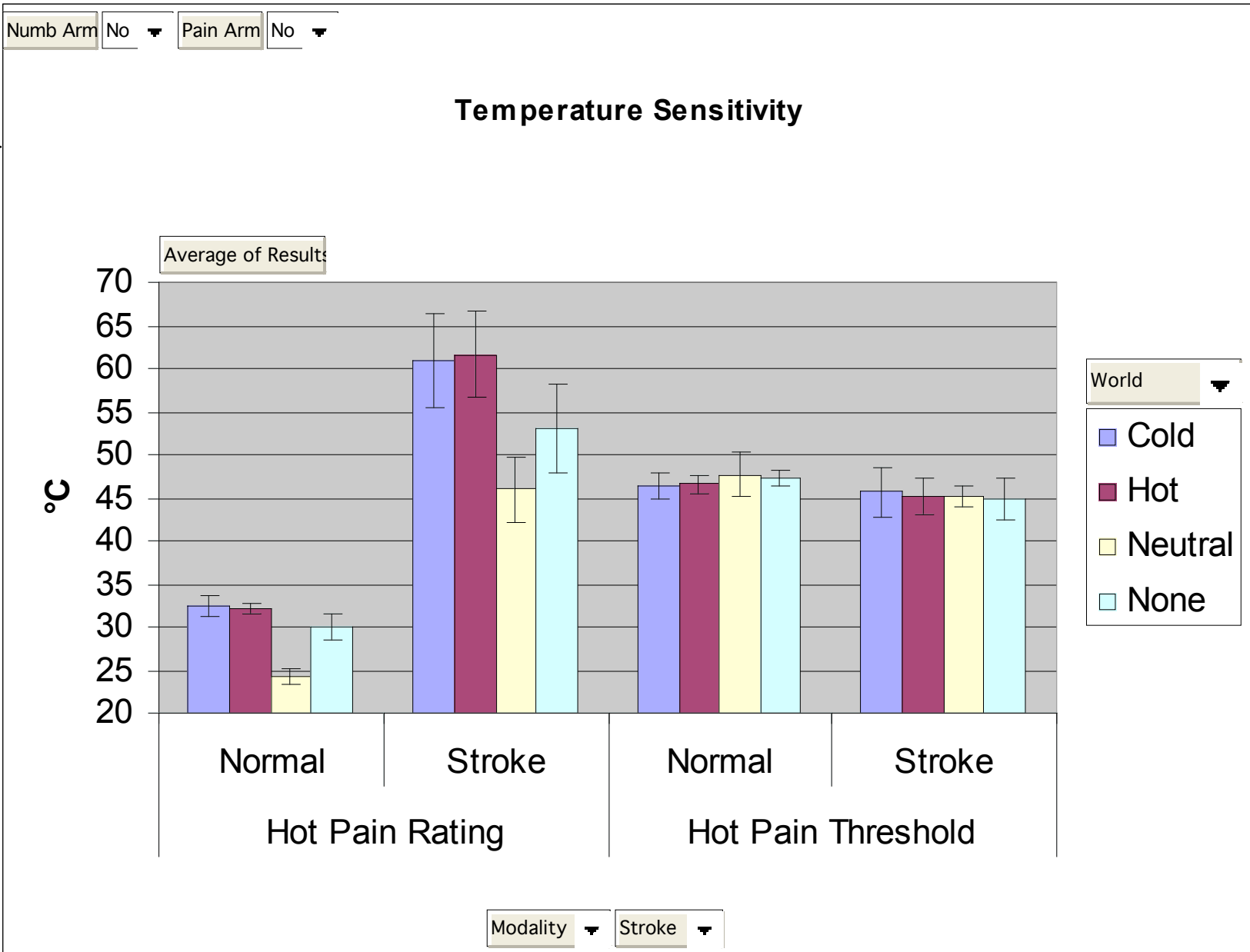


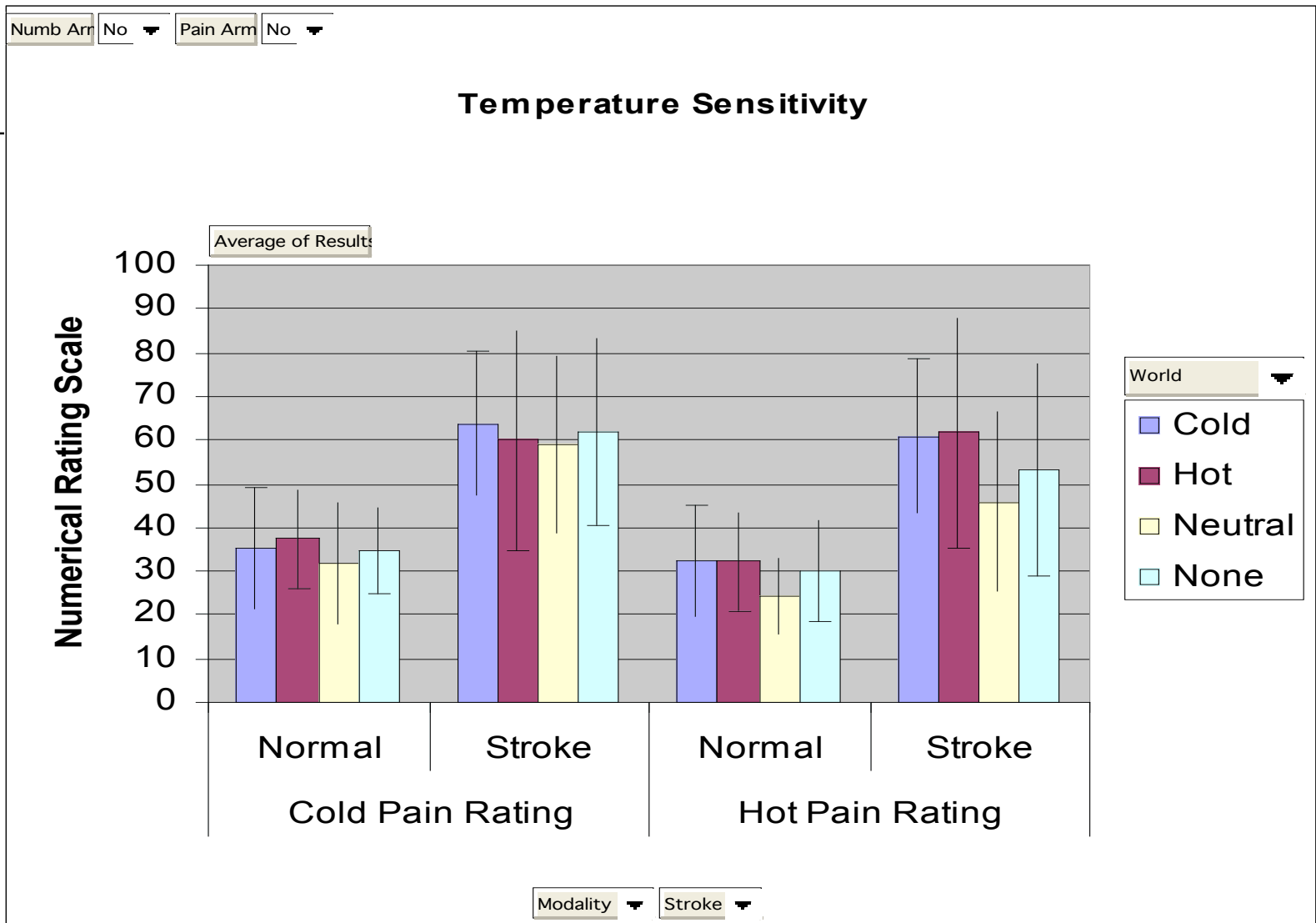


Temperature neutral environment











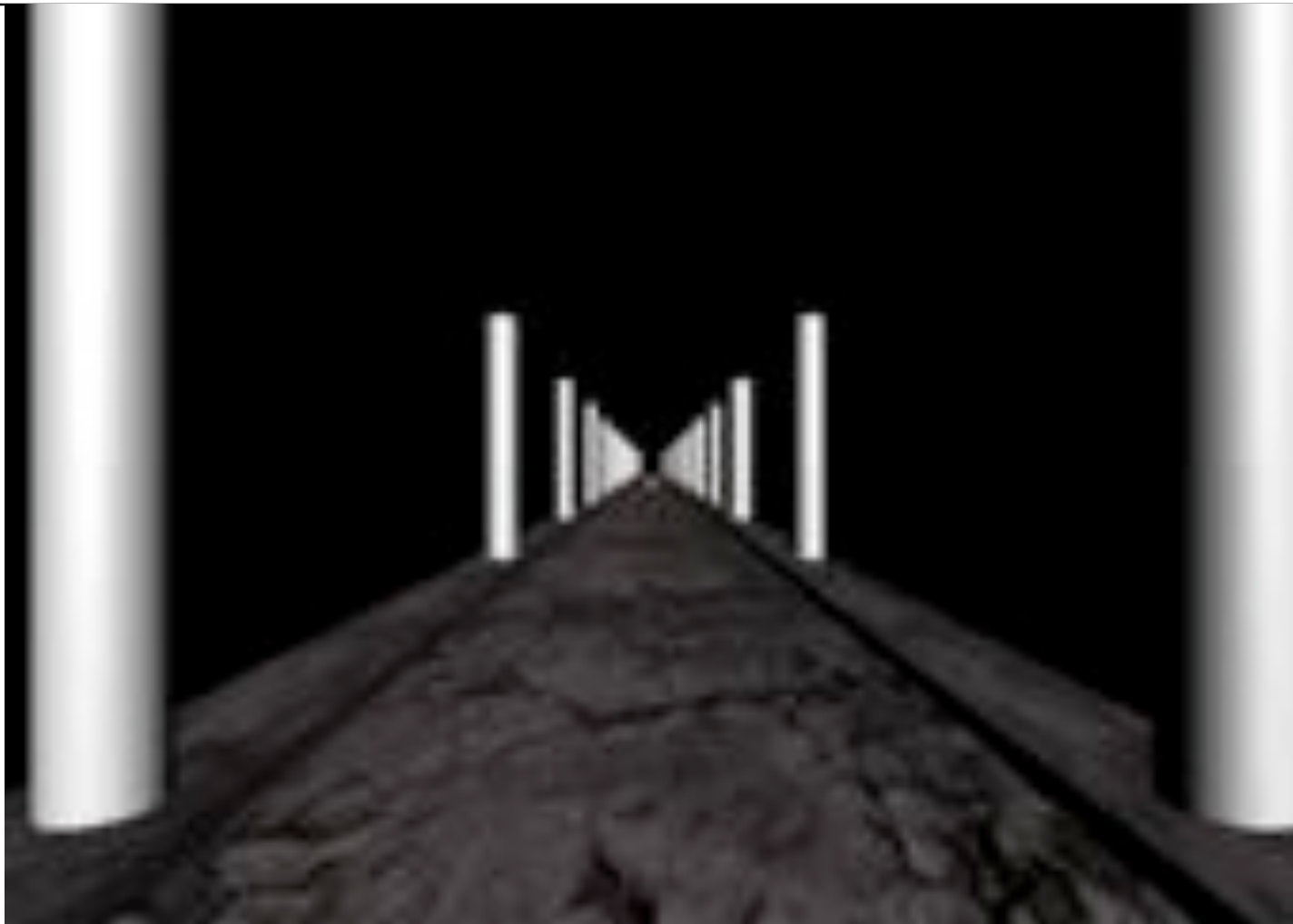
Results



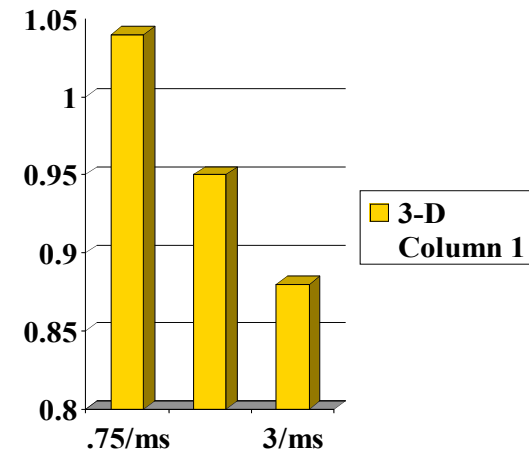
VR) 1= Hot, 2= Cold, 3= Neutral, 4= No VR

- Patients in stroke group without pain had the highest pain threshold in Cold VR condition for both cool and warm stimuli.

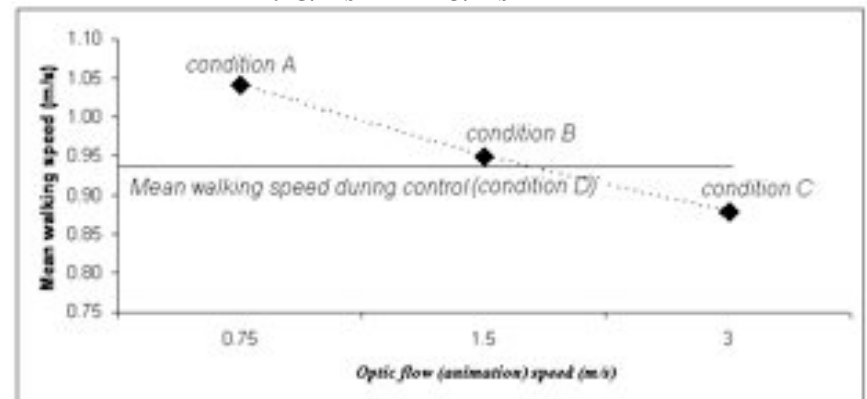
Optic Flow and ergomotion



Virtual reality and speed of movement



Why is manipulating speed of movement important?





Manipulating Movement speed

- Visual cues
- Audio cues

Driving Simulation (assessment and education)



Augmented Reality

- Mirror box
- Phantoms
- “Bilateral” and/or altered haptic feedback



Computer game to explore fear



<http://www.newscientist.com/blog/technology/2007/08/electro-shocking-gamers-to-explore-fear.html>

Wii game in rehabilitation



Listen to Interesting video clip:

<http://www.npr.org/templates/story/story.php?storyId=19346671>

A Randomized, Controlled Study of the Effectiveness of Video Games in Reducing Stress and Improving Mood.



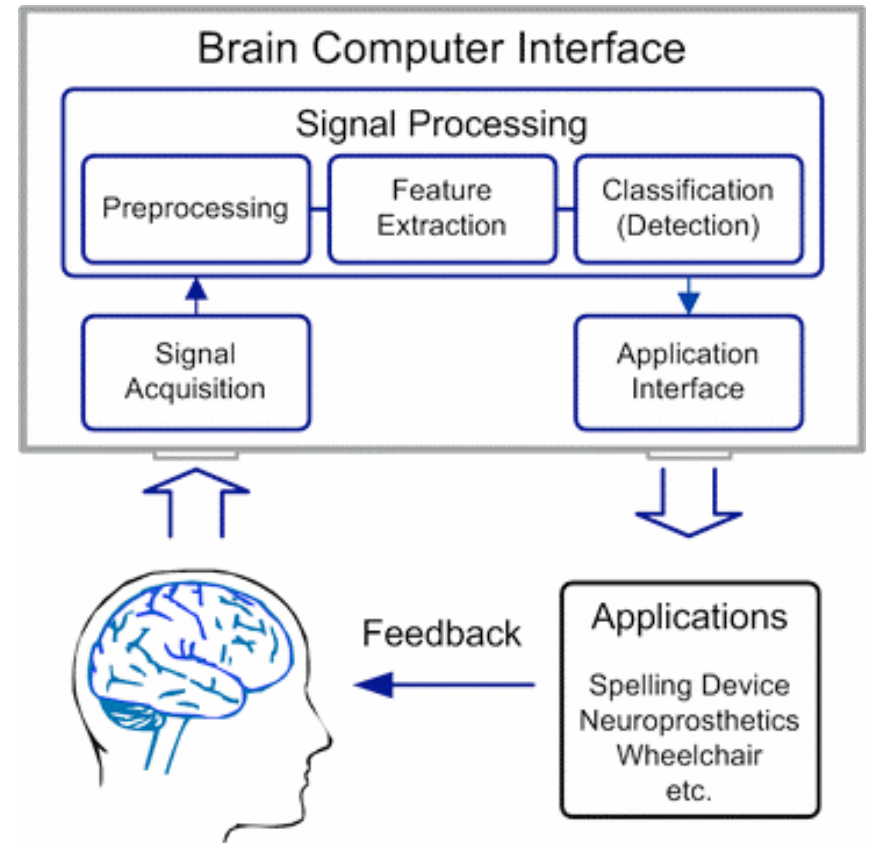
http://www.nytimes.com/2008/02/16/arts/television/16test.html?_r=1&partner=rssnyt&emc=rss&oref=slogin

EyeSpy



<http://selfesteemgames.mcgill.ca/research/index.htm>

Brain Computer Interface



Thoughts, -> control computer, -> control many, many things
e.g. wheelchair, room lighting, TV etc., etc????



What's next?

- Generalization?
- Cost High tech vs low tech..... For who, when ?
- Motivation?
- BCI
- What factors are important?
 - For pain relief?
 - For movement?
 - For balance
 - For anxiety Including movement anxiety