Human Computer Interaction
Week 6: Distributed Cognition

Mental Models
Distributed Cognition

Work is more than the activity of a single individual working alone and without tools.
Two distinguishing principles

1. Boundaries of the unit of analysis for cognition
2. Range of mechanisms assumed to constitute cognitive processes

Task: Sorting a deck of cards
Three ways that cognition is ‘distributed’

• Socially

• Internal / External

• Through time

Functional system
Functional system

• The system is constrained by the set of resources appropriated into the resolution of the problem.

• The system, not the individuals performs the task.

Practical Task: Cognitive Processes in the Library

• In groups, see if you can identify cognitive processes in the setting of the library.
• Map out the information flows through these processes.
• How is the information represented and transformed.
• Can you find examples of ‘cognitive artefacts’ or other concepts from this week’s lecture and readings?
• For the discussion next week, prepare a presentation to show to the rest of the class.
Cognitive artefacts
Embodied Cognition

Minds are not passive representational engines, whose primary function is to create internal models of the external world. The relations between internal processes and external ones are far more complex, involving coordination at many different time scales between internal resources—memory, attention, executive function—and external resources—the objects, artifacts, and at-hand materials constantly surrounding us.

Socially Distributed Cognition
Critical Questions

- Is computation an appropriate metaphor for all activities?
- Is cognition?

Readings

- Y. Rogers, "A Brief Introduction to Distributed Cognition", Discussion Paper Interact Lab, School of Cognitive and Computing Sciences, University of Sussex, 1997
Image Credits

- http://www.flickr.com/photos/tim-owen/3330644976
- http://www.flickr.com/photos/oneeighteen/1346919647

Image Credits

- http://www.flickr.com/photos/36122696@N08
- Herb Kawainui Kane
- http://www.flickr.com/photos/idi0tech/1444716026
Image Credits

- http://www.flickr.com/photos/eob/78714830