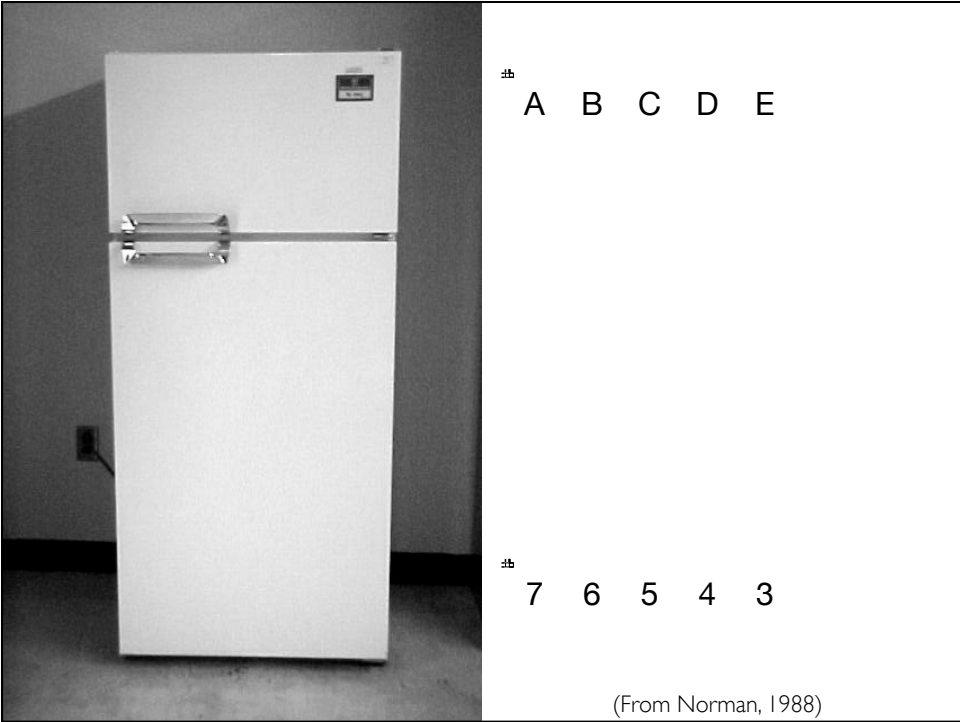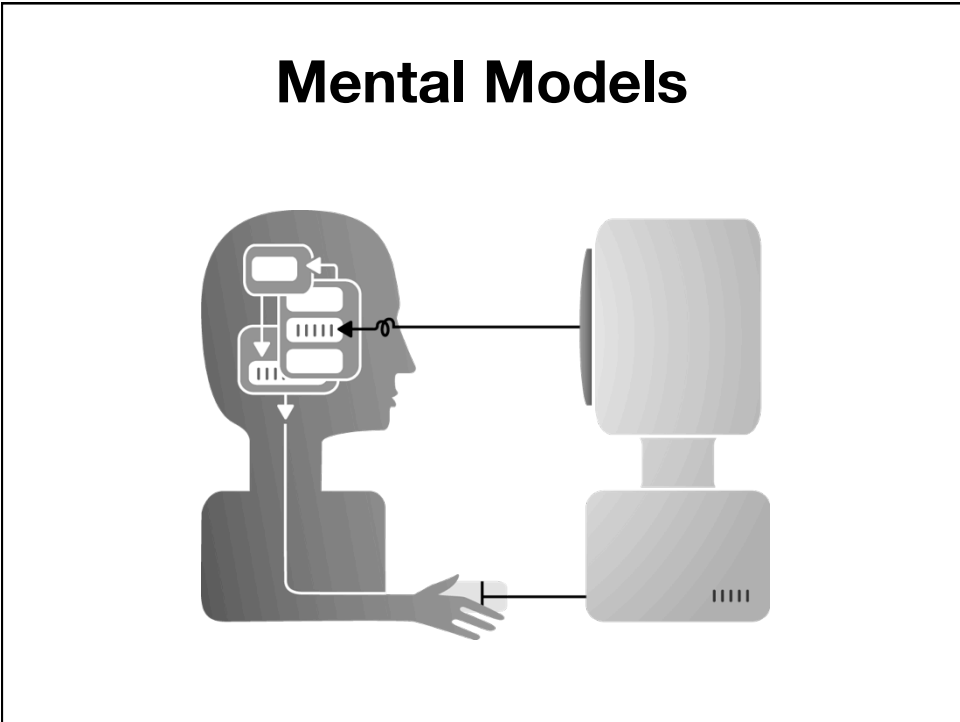# Mental Modelers

HCI Lecture 3
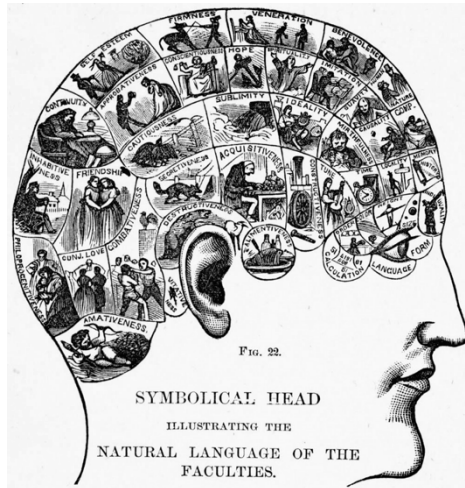
What is happening here?

What are these people
Thinking?

Mental Models

A B C D E

7 6 5 4 3

(From Norman, 1988)

A B C D E

7 6 5 4 3

(From Norman, 1988)

A   B   C   D   E

Normal settings	C	5
Colder fresh food	C	6-7
Coldest fresh food	B	8-9
Coldest freezer	D	7-8
Warmer fresh food	C	4-1
Off (fresh food & freezer)		0

7   6   5   4   3

(From Norman, 1988)

A B C D E

7 6 5 4 3
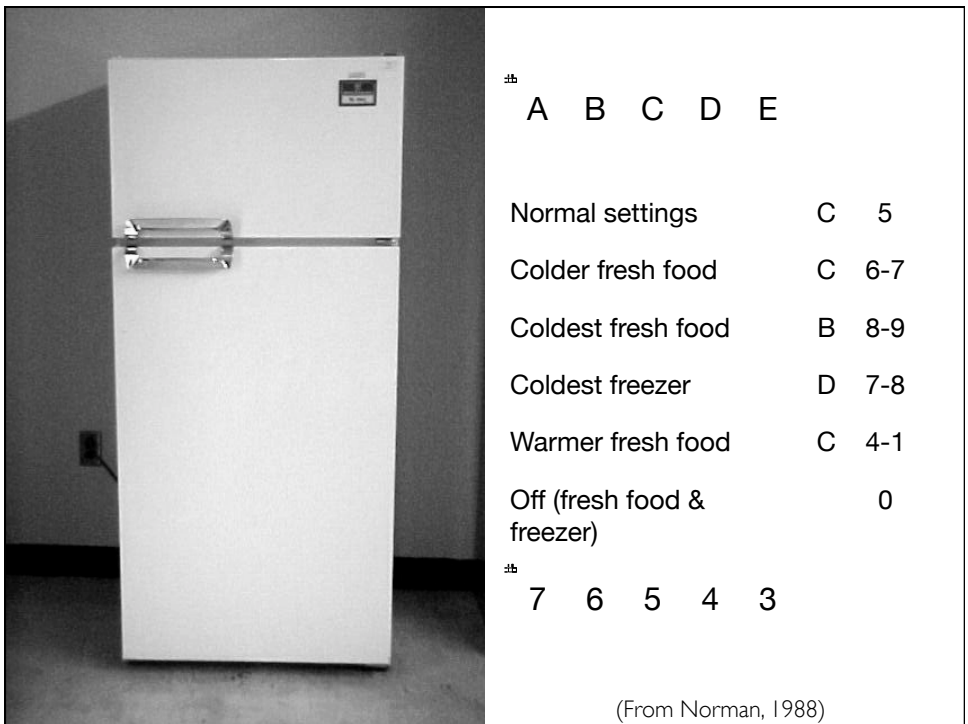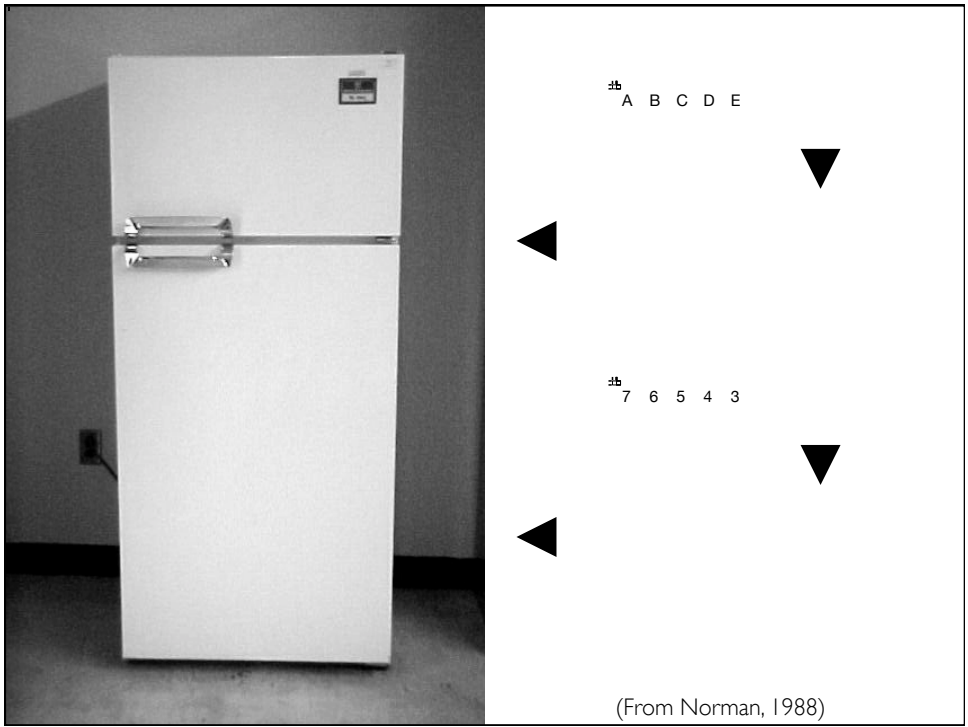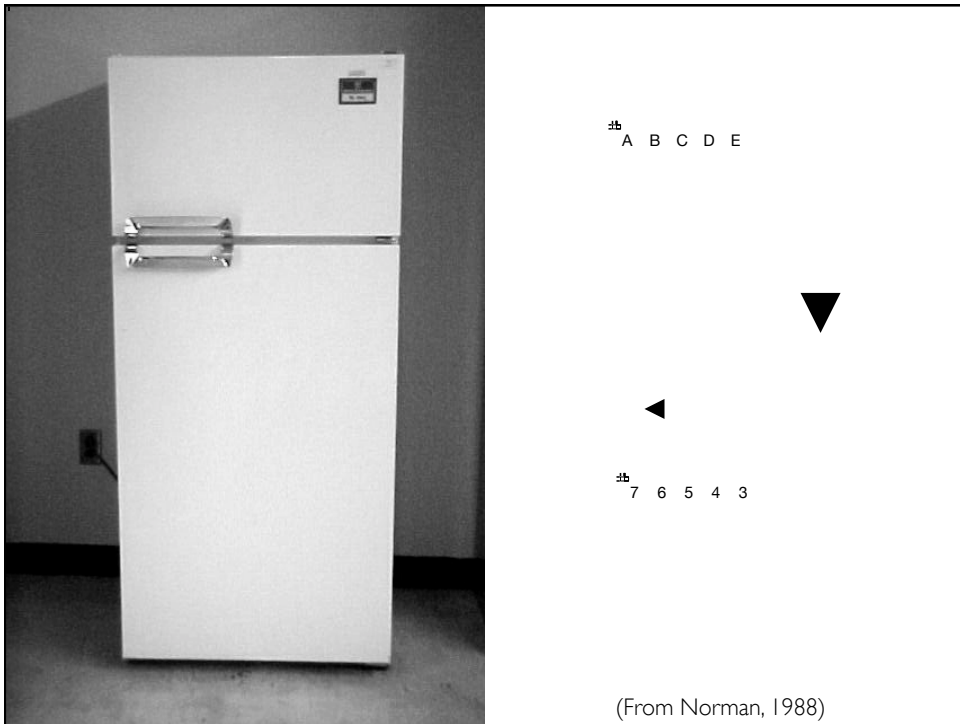
(From Norman, 1988)

Mental models mediated by system image

User

Designer

System

System image

(From Norman, 1988)

Break

When would it be useful to have a mental model as a user?

A model of...

- how the system works
- what its components are
- how they are related
- what the internal processes are
- and how they affect the components

(Carroll & Olson 1988)

2 Kinds of model

- Surrogate - a model that mimics the output of a system, but not the internal workings.

- Metaphor models - you understand a product by comparing it to something else that you already know.
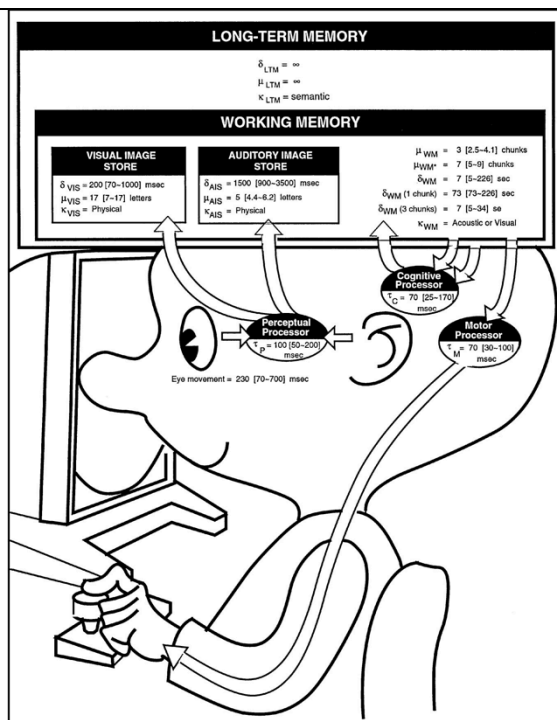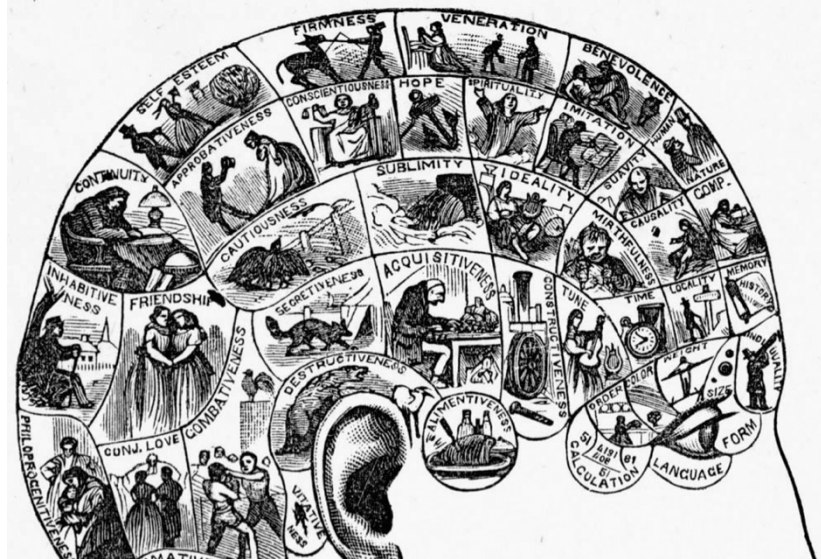
Critical Questions?

Break

7+-2 'rule'

- People can store 7 things in their short-term memory (plus or minus 2).
- What does this mean for interface design?

Information Processing Model

(Card 1983)

What is Cognition?

Components of Cognition

- Attention
- Perception and recognition
- Memory
- Learning
- Reading, speaking and listening
- Problem solving, planning, reasoning & decision making

Should there only be seven items in a menu?

Task for next week

- Design a log in page for an OpenID enabled website.
- Try to make it usable by people who've never heard of OpenID

Tips

- Ask someone to walk you through their process of logging in to a website that they use (e.g. facebook).
- Ask them to talk you through the process and explain what they're thinking at each step.
- Stop them and ask for more detail if you think it's appropriate.
- Watch out for situations where the system doesn't do what they expect. Ask why they think this is.
- Try the same thing with an unfamiliar website (e.g. one using OpenID).

Readings

- Preece, J., Sharp, H. & Rogers, Y., 2002. "Interaction design : beyond human-computer interaction", New York: J. Wiley & Sons. Chapter 3
- Payne, S., 2003 "User's Mental Models: The Very Ideas" in Carroll, J (ed) "HCI Models, Theories, and Frameworks" London, Morgan Kaufman.

Image Credits

- How to Read Character: A New Illustrated Hand-Book of Phrenology and Physiognomy, for Students and Examiners; with a Descriptive Chart. (New York, Fowler & Wells Co., Pubs., 1891)

- http://www.flickr.com/photos/glenscott/1578514678/