

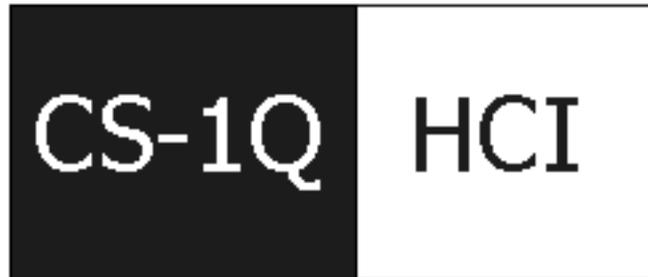
Users

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What is HCI?

- 1940's:
 - Ergonomics focuses on study of work.
- 1950's & 1960's:
 - focus on Human Factors of machine interaction.



- 1980's & 1990's:
 - focus on Human Computer Interaction.
- 2000 on:
 - back to human factors of machine interaction;
 - *ubiquitous* computers embeded in other devices.

Users

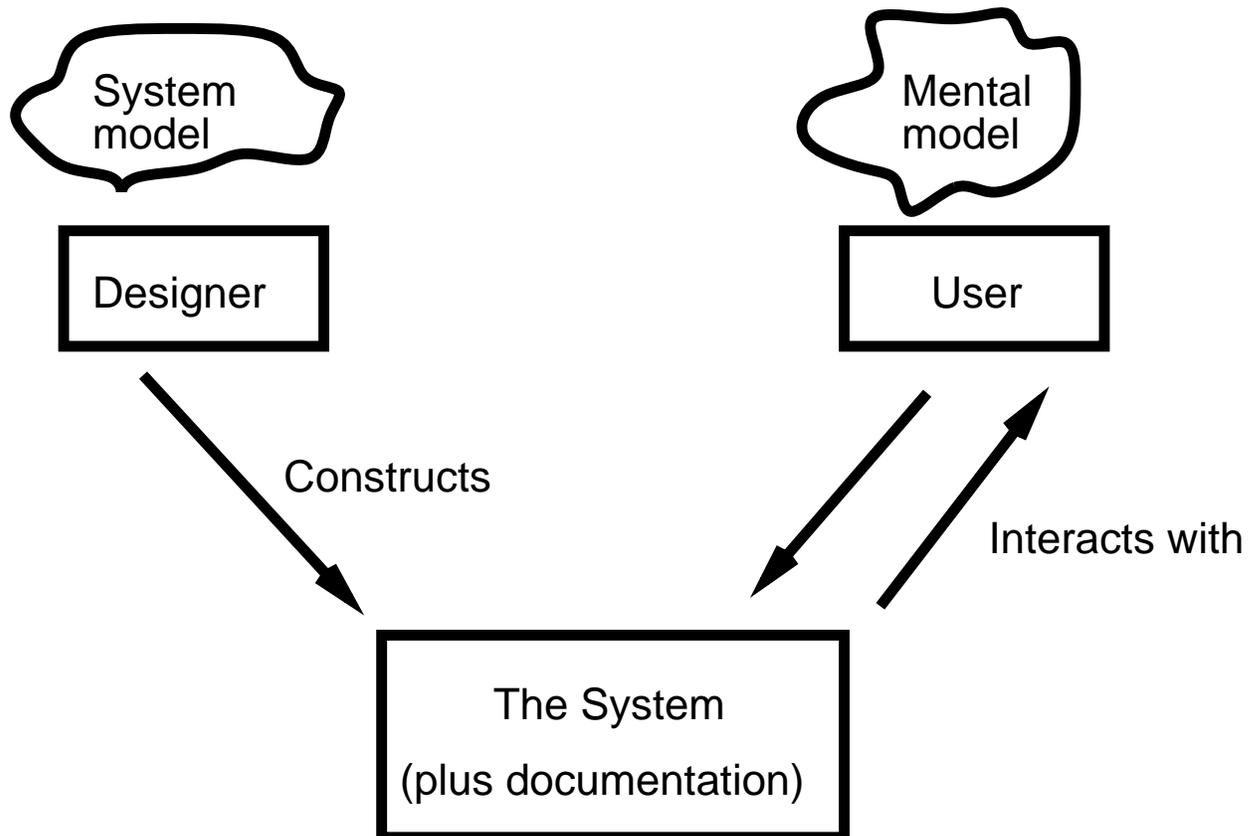
- What is a 'typical' computer user?



- What would make them happy & productive?

Users

- What do you think of when you use a computer?



- Users develop *mental models* of the system.
- This is different from the designers model.
- It also differs from their model of your model.

Perception

- We detect signals in our environment.



- Infra-red eye tracking.

Perception

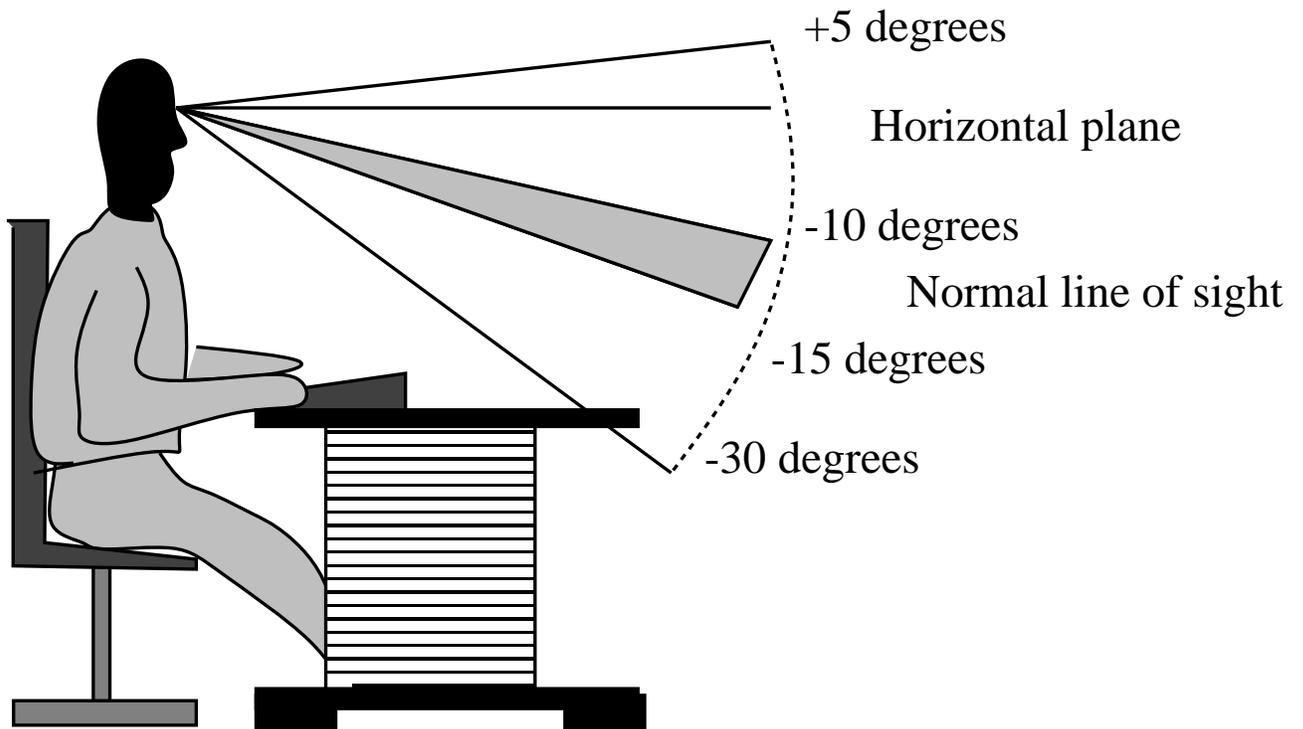
- What we detect is affected by:
 - absolute and relative signal strength;
 - anticipation of the signal;
 - signal to noise ratio.

- Links between perception and cognition:
 - users often perceive signals;
 - but fail to interpret them;
 - or understand their *semantics*.

- Anticipation affects perception.

Physiology

- Physical attributes affect ability to use devices.



- RSI, Muscoskeletal injuries etc.

Physiology

- Designers also make assumptions about physiology:
 - average person is not 1.8 meters tall
 - average person does not weigh 100kg
 - nor is their finger span 21cm.

- If we designed for the average who would we exclude?

Cognition

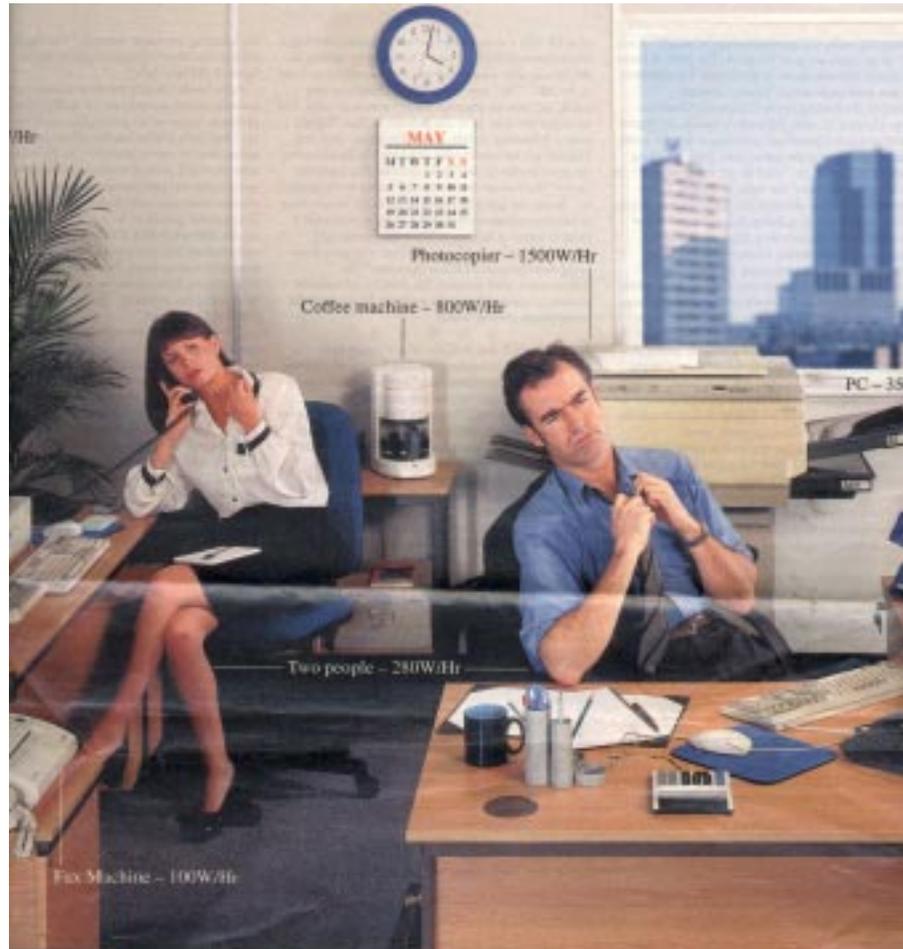
- How do users think about the systems they use?

- Different emphasis on *short and long term memory*.

- Experts work at a skilled level;
 - if something goes wrong we might use some rules;
 - if all else fails try general knowledge.

Environment

- External impact on cognition, perception and physiology.



- What can you control?
 - heat, noise, vibration, colleagues?
 - don't work next to a printer...

Culture

- Globalisation or fragmentation?
 - Japanese version of Microsoft Word:
 - took 2-3 years to develop;
 - team of local programmers;
 - Tokyo usability lab.
- Cultural diversity within a nation (US, Scotland?).

Age

- By 2008, will be more pensioners than schoolchildren.

- *Chronological ageing:*
 - natural rate at which we lose our faculties;
 - may not be able to see so well etc.

- *Functional ageing:*
 - rate beyond the chronological ageing;
 - can be associated with workplace injuries.

Gender

- Women have better spatial awareness?

- Gender related terminology?
 - 'kill' a process or 'abort' a print job.

- Men may be better at interrupt handling?

- Thematic vagabonding and encysting.

Disability

- Key concept of *accessibility*.
- Screen readers and braille displays.
- Word prediction systems.
- Scripts based communication.
- Many technologies transfer into the mass market.

Summary

- Users are not designers.
- Physiology, Perception, Cognition.
- Environment, Culture, Age, Gender.

Further Reading

“In the light of the scientific evidence, pregnant women do not need to stop work with VDUs. However, to avoid problems caused by stress or anxiety, women who are working with VDUs should be given the opportunity to discuss their concerns with someone adequately informed of current authoritative scientific information and advice.” (Health and Safety Executive)

- Shneiderman on:
 - human diversity, pp 18-27;
 - individual and society 585-600.