User Interaction: The Human

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"...in an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it" (Simon 1971, p. 40-41).

Augmented (hyper) reality

http://vimeo.com/8569187

"Designing an object to be simple and clear takes at least twice as long as the usual way. It requires concentration at the outset on how a clear and simple system would work, followed by the steps required to make it come out that way -- steps which are often much harder and more complex than the ordinary ones. It also requires relentless pursuit of that simplicity even when obstacles appear which would seem to stand in the way of that simplicity."

T.H. Nelson, 1977

http://www.flickr.com/photos/schultzlabs/933418919

http://www.flickr.com/photos/oxborrow/51812810/

Humans are limited in their capacity to process information.

This has important implications for design.

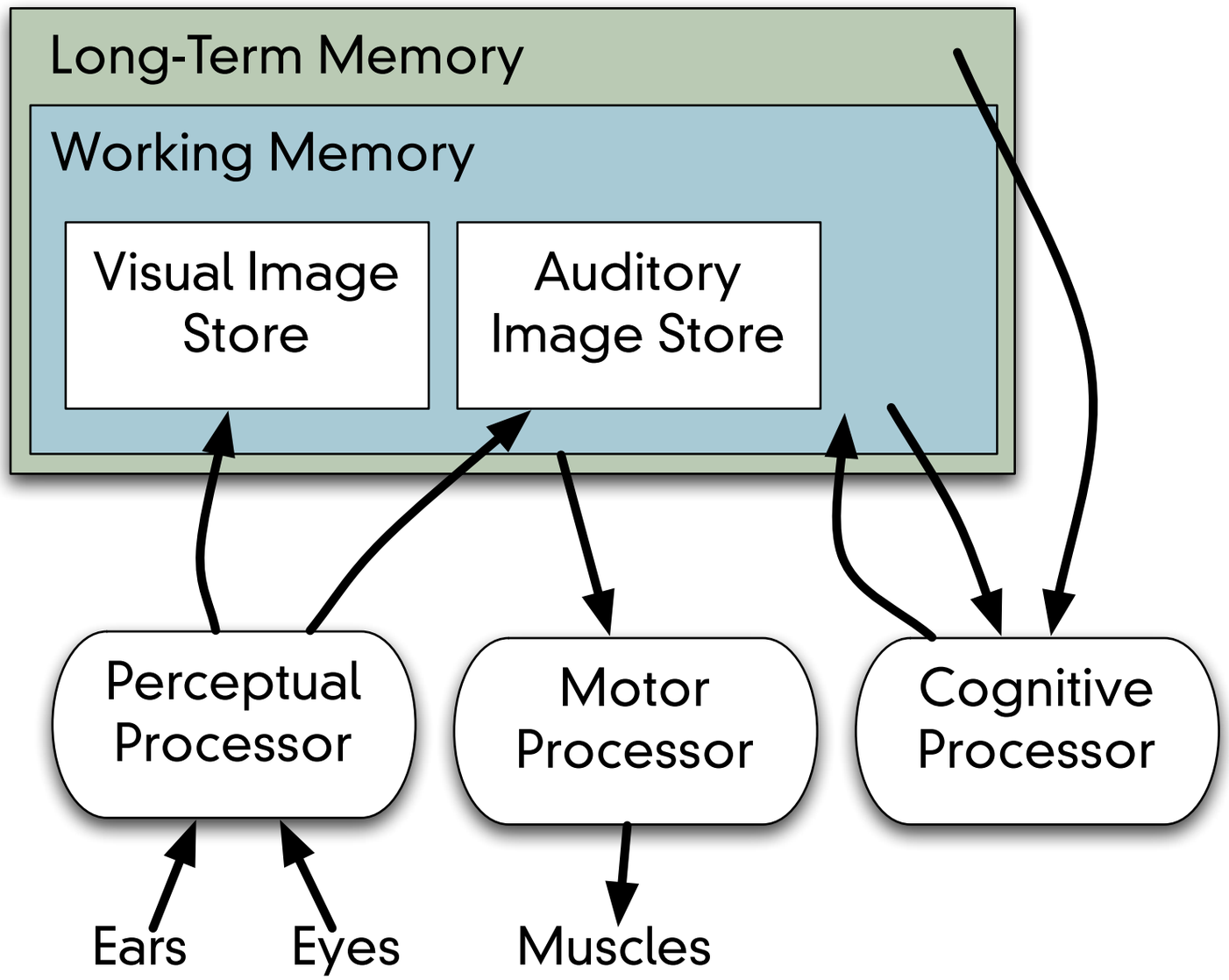
Human Computer Interaction is a misnomer.

Rarely do people want to interact with a computer.

They want to interact with people, data, media.

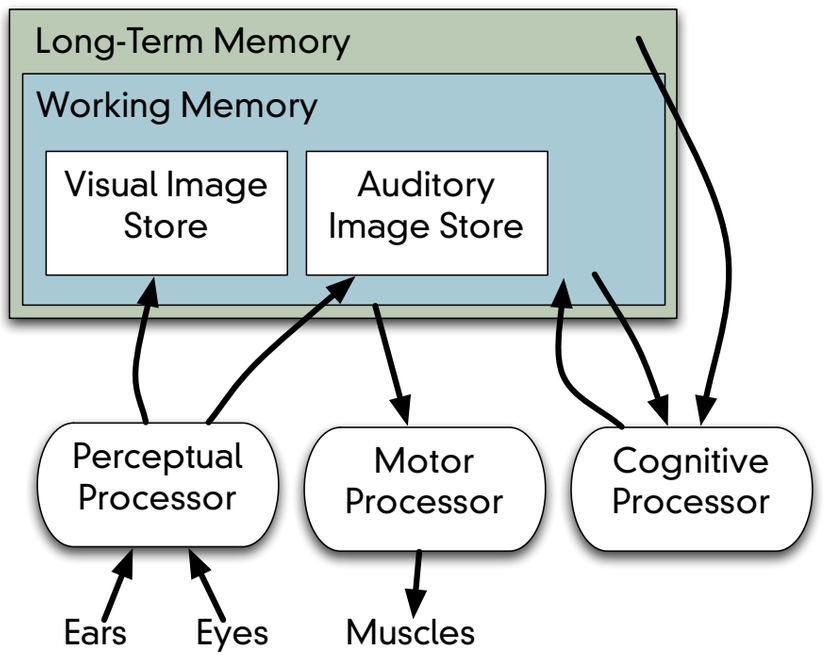
Even gaming isn't about the computer as much as it is about having fun through a computer.

The Model Human Processor



Card, Moran, Newell (1983)

The Human



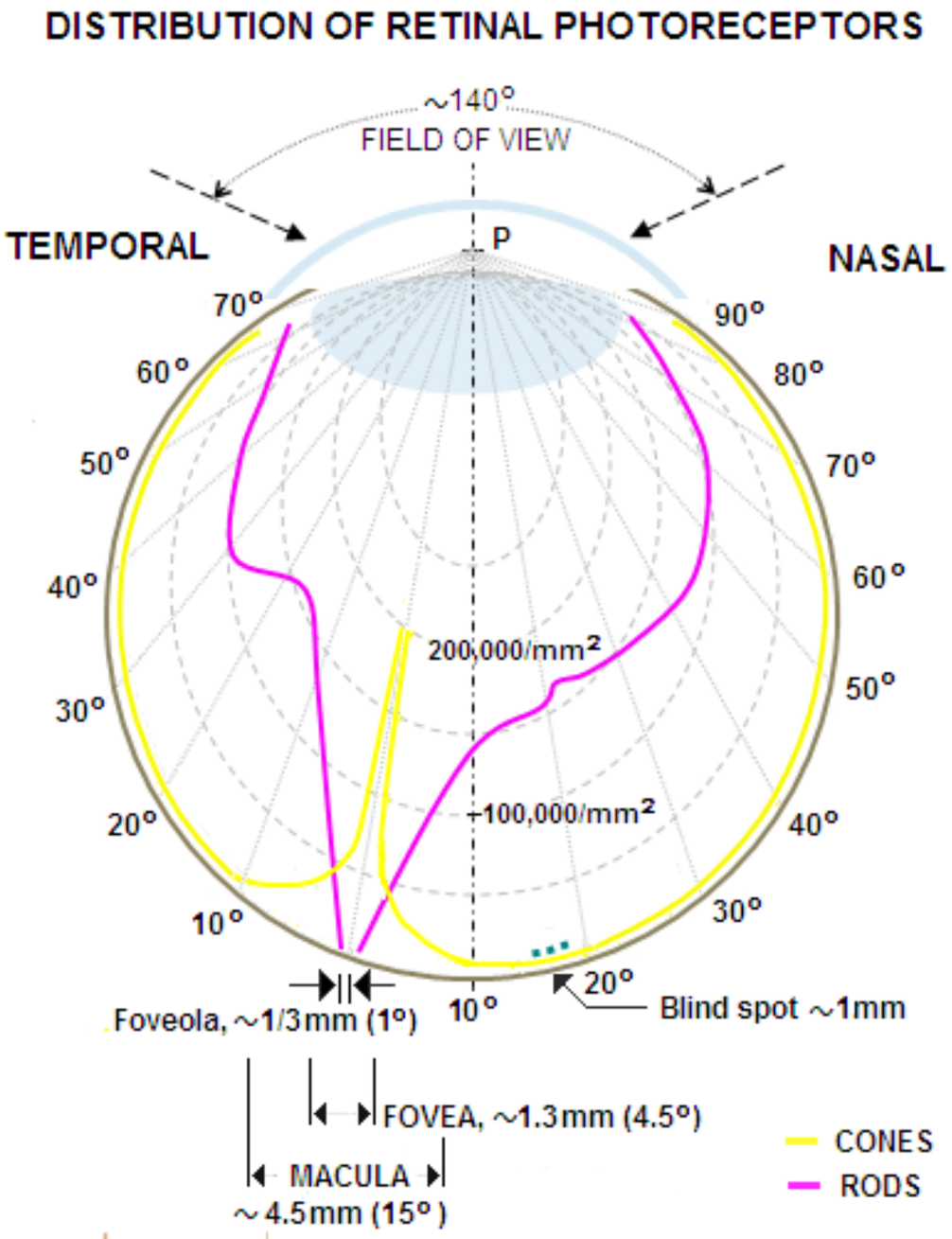
- Information Input/Output
  - visual, auditory, haptic, movement
- Information stored in memory
  - sensory, short-term, long-term
- Information processed and applied
  - reasoning, problem solving, skill, error
- Emotion influences human capabilities
- Each person is different

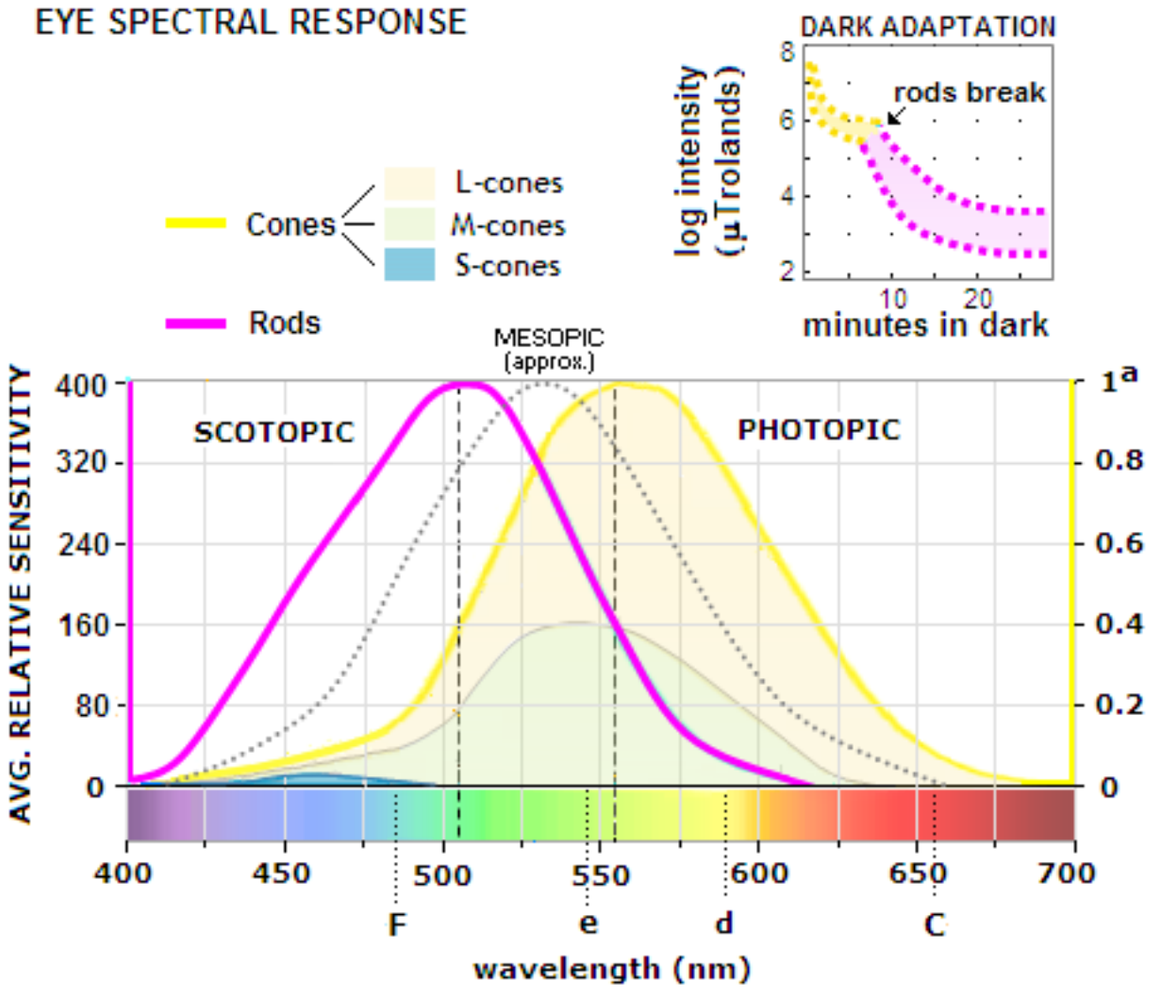
The Eye - Physical Reception

- mechanism for receiving light and transforming it into electrical energy
- light reflects from objects
- images are focused upside-down on retina
- retina contains rods for low light vision and cones for color vision
- ganglion cells (brain!) detect pattern and movement

The Eye - Interpreting the signal

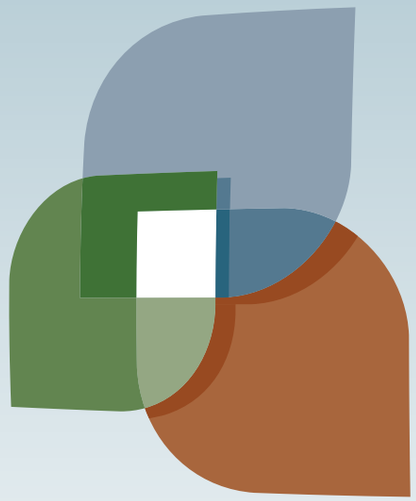
- Brightness
  - subjective reaction to levels of light
  - affected by luminance of object
  - measured by just noticeable difference
  - visual acuity increases with luminance as does flicker
- Color
  - made up of hue, intensity, saturation
  - cones sensitive to color wavelengths
  - blue acuity is lowest
  - 8% males and 1% females color blind





- rgb notation

http://www.telescope-optics.net/eye_spectral_response.htm



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