What is perception for..?

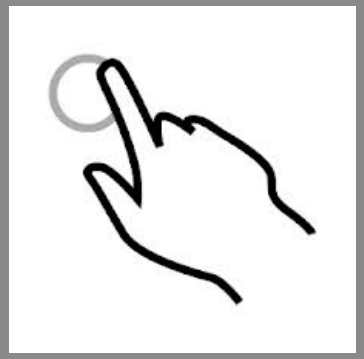
Bill Griesar, Department of Psychology
Portland State University

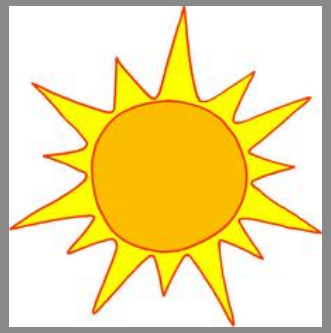
Perception serves a purpose

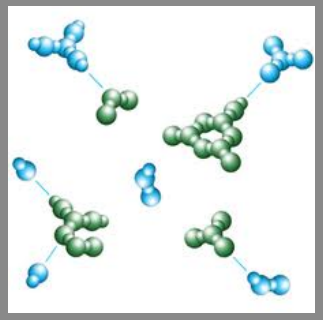
- Information: what is it..?

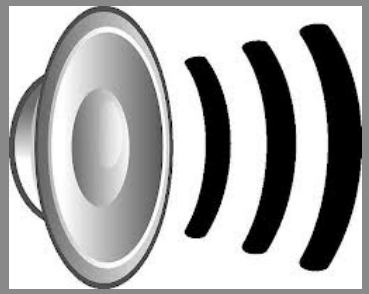
Different types of stimuli/energy

- Energy is neither created nor destroyed
- Energy can be converted from one form to another



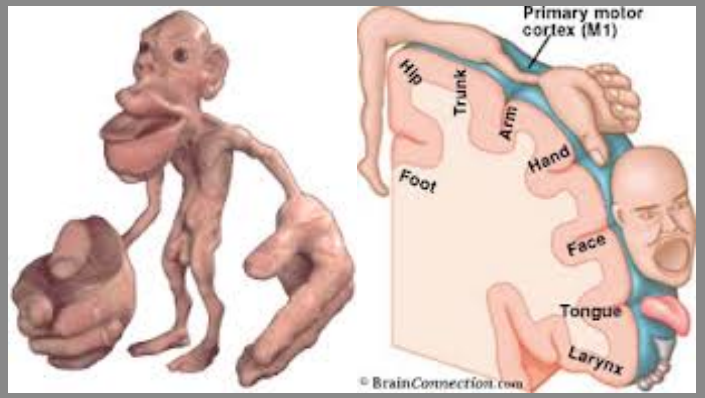


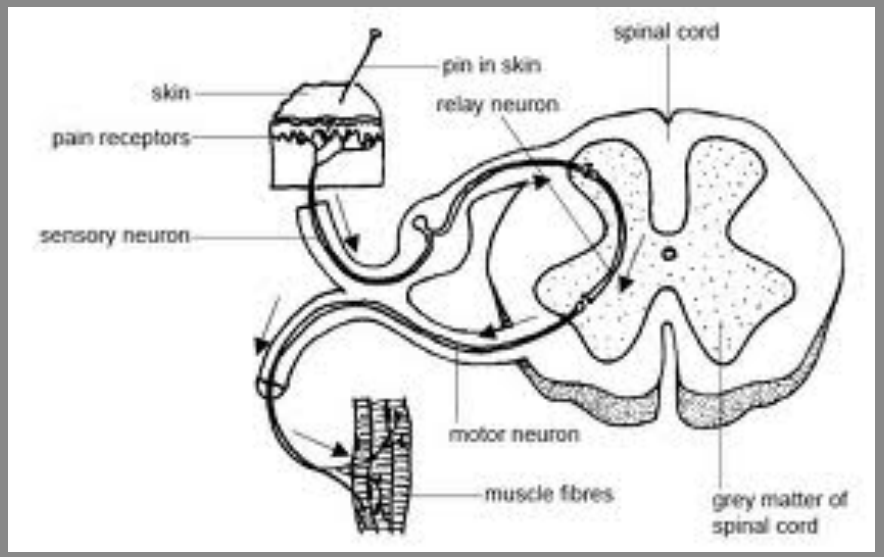




For perception, you need detection

- Specialized detection: SENSORY NEURONS
- Homuncular organization:
  Not all types of stimulation/ energy detected equally…

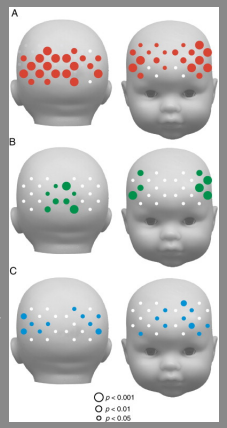




- After detection, there must be information transfer to other parts of the nervous system (via INTERNEURONS, MOTOR NEURONS). Why?
- Importance of sensory exposure during development:
  No sensory experience, no sensory perception…

Importance of development

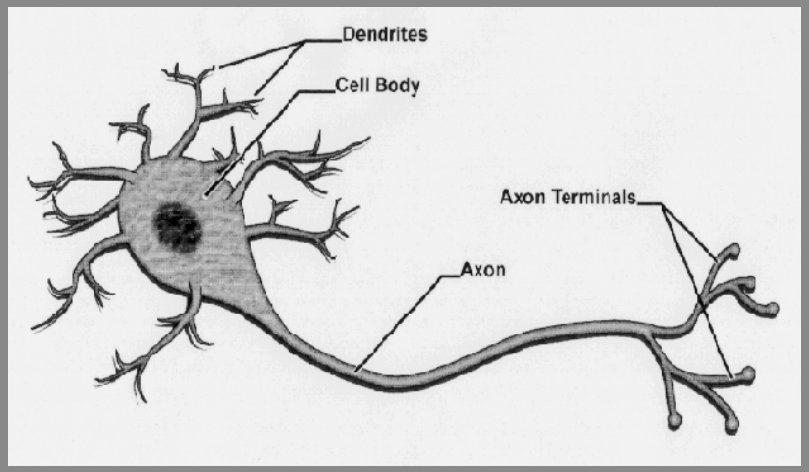
- **Synesthesia**: a mix of sensory experience
- Synesthetic associations decrease during infancy
  - K. Wagner & K. Dobkins (2011), Psychological Science
  - Infants have more neural connections than adults
  - Presence of particular shapes influences color preferences in 2 – 3 month old babies, but not in 8 month olds, or adults. Synesthesia waning..?



- Effect of auditory input on activations in infant diverse cortical regions during audiovisual processing
  - Watanabe et al (2011), Human Brain Mapping

Action potentials are all the same

- Neurons carry information electrically
- Edgar Douglas Adrian (1932 Nobel Prize winner): described stereotyped electrical response of neurons.
- **So what determines perception?**
  - Specific detection machinery (sensory neurons), plus network (where information travels, and gets mapped; and/or linked to behavioral/motor output).



Neurons carry currents

Different sensory neurons are responsive to different stimuli/forms of energy…

…and send that information to different places in the brain.