# Memory and Cognition

## February 3, 2013

* **Alternative Models of Memory**
  + Process Models
* **Perception** 
  + Definition: The process of interpreting information from stimuli.
  + What hits your retina is sensation, perception is what you do with it (young woman vs. old woman)
* **Overview of Sensory Information Processing**
  + *Stimulus Energy* – e.g. light waves leading to vision, vibration in the air that leads to sound, etc. Some physical energy
  + *Transduction* – Taking that raw physical energy and converting it to electrical activity.
  + *Sensory Stores -* Iconic / Echoic Storage
  + Selection for recording and further processing
    - Some, but not all is sent for recording
* **Sensory Stores**
  + Functions of Sensory Memory
  + Characteristics of Sensory Memory
    - *Veridical Form* – It should be real and accurate
    - *Relatively Large*
    - Brief Period of Time – Since it stores everything, and we’re continually receiving new information, then it must erase quickly to avoid superimposing on the next image. Lasts only 250ms
* **Iconic Memory**
  + Sperling (1960)
    - Sperling’s work demonstrates the capacity and duration of storage
    - Flashed 9 or 12 letters at 50ms, also known as full report or partial report. All of 9 or 12 letters enter iconic memory, but they just fade very quickly. Subjects do not know ahead of time what line they’re going to recall. Partial reports can be considered much the same way exams are done since you aren’t tested over everything. As long as he presented the cue within 250ms they had no problem identifying that row, after 250ms it was gone.
  + Backwards masking
    - The underlined word you can recall, the circle say over the X replaces the memory so it removes memory from before.
  + Is iconic store simply a visual afterimage?
    - Some have argued it’s not a memory system, it’s a visual afterimage. If you stare at something red, the afterimage is green. If blue, it’s yellow. If it’s really an afterimage we should see the same colors, not a complementary color. It truly is a memory system, not an afterimage. Dyslexic children see the exact same letters other children do, they just differ on how to process it from their sensory store.
* **Echoic Memory**
  + *Three-eared man experiment*
    - Presented 3 numbers on each ear
    - If asked during a full report, they can do 3-4 numbers. If asked during a partial report, they can almost always get the three numbers correct.
  + Stores about 3-4 seconds
  + *Modality Effect*
    - The last few items in the list are recalled better if the list is presented in an auditory fashion, rather than visually.
  + Suffix Effect
    - By getting a suffix, but not having to remember it, you are less likely to remember the words in the group.