# Memory and Cognition

## February 6, 2013

* **Pattern Recognition**
  + **Theories of Object Recognition**
    - Template Matching
      * A type of hypothetical structure that are represented as an internal pattern in your LTM. It’s a very inflexible model; this theory states that you’d have to have a model for everything.
    - Feature Analysis
      * Two slanted lines and a connecting bar represent the letter A.
      * This reduces our load on our LTM, much less time consuming
* **Bottom-up Processing vs. Top-down Processing**
  + **Bottom-up processing (Data-driven processing)** – Processing is driven by the stimulus pattern
  + **Top-down processing (Conceptually-driven processing)** – Context and higher-level knowledge influence lower level processes. The fact you can replace every third letter with an x or rearrange the letters you can still read it. This explains why typos, in your own work, are so difficult to catch.
  + **Word Superiority Effect** – Letters that are in the context of a word is easier to detect than non-words. The flashing of WBKX (bottom-up) and JOKE (top-down + bottom-up) example in class.
  + **Phoneme Restoration Effect** – A tape-recorded sentence is played with a phoneme (smallest unit of sound) is deleted and white noise is substituted in its place. What you hear is dependent on the context of that sentence.
* **Selective Attention**
  + You are only aware of a small portion of what hits you.
  + Through the process of pattern recognition, you take info from the sensory memory store and put it towards a meaning. When does that occur? Before or after selective attention? Do you chose what you want to pay attention to, then through pattern recognition it’s assigned meaning or does pattern recognition occur first?
  + Auditory Attention
    - Dichotic Listening Task
      * Listening to only your right ear when you’re being talked to by both ears. You’ll not know anything from the shadow ear
* **Theories of Selective Attention**
  + **Early-Selection Filter Models**
    - *Broadbent’s Filter Theory*
      * Using a factory as an analogy with two different production line, but there’s only one inspector that must inspect every item. The bottleneck is the inspector. In order to do this you must close off one side of production to get one line through. Attention plays the role as a “gate” mechanism. Say you’re only listening to the right ear, the right ear is assigned meaning, the other ear that’s blocked off rapidly fades away and never gets processed for meaning whatsoever.
      * ***Evidence for:***
        + ***Broadbent (1954) what?***
      * Problems for Broadbent’s Theory
        + Gray and Wedderburn (1960)

Shadow (dog, 6, fleas) ignore (8, scratch, 2). When asked to shadow one ear, because of the flip flops of words and numbers it stops the effect. They have no trouble getting information from the unattended ear.

* + - * + Cocktail Party Effect

If your name is presented in the ignored ear, often times then people are able to identify it. It will then disrupt their ability to shadow the other ear. Attention is not a firm gate like Broadbent said, it acts more like a volume control. You are able to turn down the unattended stimulus.

* + - * Triesman’s Attenuation Model
        + It is still considered early-selection, but more flexible than broadbent’s theory. It allows for processing of more than one stimulus at a time. It does not allow for any long-term effects of that information, you should only be affected by the information that you are consciously aware of. The information you’re not consciously aware of should fade away.
  + Late-Selection Filter Models
    - Every single thing that hits your senses is processed for meaning, and then you chose what you want to pay attention to.
    - **Evidence for:**
      * Subliminal Semantic Priming
        + Lexical Decision Task – Given a sequence of letters, decide as quickly as possible if those letters make up a word. If the “priming” word is semantically related then it’s faster (Doctor -> Train is slower than Doctor -> Nurse). It hits your sensory store, assigning it meaning, and before you even recognize it.
      * Homophone Priming
      * Lackner and Garrett (1972)