# Memory and Cognition

## February 11, 2013

* Which theory of object recognition would require less storage space in LTM? Feature Analysis. Understand template matching! It would require massive LTM capacity in order for template matching to work.
* The fact that typos can be difficult to catch can be explained by? Top-down processing, we don’t perceive each letter individually rather the whole word as a whole. You don’t see each word, just the whole sentence.
* According to Broadbent’s filter theory of attention, if you have an intense phone conversation while a movie is playing on the TV in the background, your knowledge of the movie will consist of: the physical characteristics of the speaker, such as the sex of the speaker.
* **Theories of Selective Attention**
  + Late-Selection Filter Models
    - Everything attains meaning and should effect you, but you chose what to process to.
  + Homophone Priming
    - Individuals were given semantically related words in the ignored ear (rabbit & hare and window & pane).
    - They’re given either a recognition test or spelling test.
    - **Recognition** – (table, hare, cat, pillow, pane, tape) identify the words you were exposed to
    - **Spelling** – Spell “hare” or “pane” they’ll spell it “hair” or “pain”
  + Lackner and Garrett (1972)
    - **Shadow** - The boys threw stones at the bank
    - **Ignore** – Money or river
    - Depending on whether they remember money or river, they’d say they threw it at the bank building (money) or river bank (river)
    - It’s as if anything someone says to whoever it can effect their behavior, this proves that subliminal messages work
    - We only can be affected on subliminal messages, but only on a very short basis and simple judgments.
  + The theory in the end is that selective attention is flexible. Selective attention is easier if the two messages are very different.
  + **Visual Attention**
    - Selective Looking Studies
      * We can only process a limited amount of information in our visual field.
    - Visual Neglect (left side neglect) – Disorder
      * Disruption in spatial awareness, they’re unable to focus ontheir left hand side. They might just shave the right side of their face, they might deny ownership of their arm or leg. They made her wheelchair and made it turn to the right so she could eat all of her food. If she was hungry, then magically food was there.
      * Once it is pointed out to her, in the YouTube video, she is made ware.
  + Capacity Model of Attention
    - You can easily do laundry and watch television, it’s difficult to study and watch television at the same time. Same applies for cell phone use and driving.
    - We have a limited ability to deal with multiple sources.
    - The ability to do multiple things together you have to break it down to % of cognitive resources being used. **Attention is the process of allocating these resources to various activities.**
    - Secondary Task Technique (Divided Attention Task)
      * Primary Task, Secondary Task
      * You’re simply asked to do two things simultaneously. They’re told to perform some activity, often times they’re given the impression the primary task is the most important part of the experiment. In addition to engaging in the primary task you must do a secondary task at the same time. Your performance is actually based on the secondary tasks performance.
      * Primary Task – Anagrams, croodt (doctor - hard) vs. dortoc (doctor - easy)
      * In addition to solving these puzzles, you’re asked to hit a button as quickly as possible every time you hear a tone in the background. The speed of the response is used to measure how much capacity you need for the anagram task.
      * Flight School Test – The pilots who were able to engage in secondary task techniques better than others, proceeded farther in flight training.
    - Attributes of Automatic Processes
      * Occurs without intention
      * Not available for conscious monitoring
      * Consume few, if any additional resources
    - Stroop Effect
      * Naming the ink color of a word that spells out another color is VERY difficult. You can’t not read.
    - Development of Automaticity
      * They occur without intention (involuntary). You are not aware of identifying the word “red”, only the end product.
    - Disadvantages of Automatic Processing
      * Any time you are confronted with change, relearning must take place.