# Memory and Cognition

## March 20, 2013

* **Consolidation**
  + **Arousal**
    - **Item Based Arousal**
      * Refers to the item themselves.
      * Study (Paired-Associate Learning Test – Pair a word w/ a number)
        + Assault – 6 (Arousing)
        + Tree – 2 (Neutral)
        + Vomit – 5 (Arousing)
        + Dance – 3 (Neutral)
        + They were test immediately after and after a weeks delay. Subjects learned more the day of than a weeks delay. The arousing words however showed the complete opposite (Reverse forgetting). Consolidation is enhanced by arousal.
    - **Subject Based Arousal**
      * Refers to the individual person.
      * Introverts have a higher level of CNS activity. Because extroverts have lower levels of arousal internally they seek it externally. ADHD kids internally are under aroused and seek it externally. If you have an extreme introvert and extrovert in a room, it will sound louder to an introvert. Introverts will learn classical conditioning faster and salivate more.
      * Study
        + Given a list of neutral items and were tested either immediately or a week later. Their results mirror the item based arousal effect. The extroverts, similar to the neutral words, remembered more initially than after a week. However the introverts remembered slightly more a week later.
    - **Adrenaline**
      * Using adrenaline can either make your memory better or worse through consolidation. If you are injected with adrenaline it can help strengthen that particular memory, but on the flip side if you prevent adrenaline from doing its job
    - Arousal can facilitate consolidation.
  + **Propranolol**
    - Beta-blocker used in blood pressure, anxiety, and stage fright. Blocks the adrenaline. Used to treat PTSD, doesn’t block your ability to remember but it makes you not remember it as much.
* **Zeigarnik Effect**
  + An incomplete task is remembered better than a completed task. Each child is given 22 activities to complete, finger painting, etc. 11 of those tasks the kids were allowed to complete them. The other half of the activities the children were interrupted. The children were given a memory task, the majority of the children remembered the incomplete activities better. The lack of completion causes arousal. Maybe the children just remember being interrupted instead of being aroused?
  + Study 2: Half were interrupted and half were completed, they were able to finish the interrupted activity. Then they were tested. If it is true because it was interrupted and not arousal, then they still should remember the interrupted activity better. Now, they do not see a difference.
* **Incubation**
  + Sometimes the answer will appear even without thinking of it. The assumption here is that you’re searching your memory without conscious awareness.
* **Hypermnesia**
  + The opposite of amnesia. Primarily only seen for pictures, not for classroom material. That information is becoming consolidated.
* **Implicit vs. Explicit Memory**
  + **Explicit Memory** – Conscious recollection of information. Direct tests of memory.
  + **Implicit Memory** – Retention of information without awareness. Indirect tests of memory.
* **Population Dissociation (Has a different effect is the definition of dissociation)**
  + **Amnesia**
    - **Anecdotal Evidence**
      * Anterograde amnesia can only form memories at an implicit level.
    - H.M.
    - Priming Experiments
      * Semantic Priming (Doctor -> Nurse)
      * Repetition Priming (Nurse -> Nurse)
      * Study
        + Study: Table, cat, banana, etc. Not presented in context of memory experiment, incidental learning conditions.
        + Explicit Test: Recall or recognition, results normal > amnesia
        + Implicit Test: Word stem competition: ban\_\_\_\_\_ or word fragment completion c\_t. If the subjects complete the stem from the word in the study list rather than any other word. Those who were in the study filled in study words more than 50% of the time. The results; amnesia = normal