# Memory and Cognition

## April 1, 2013

An example of a direct (know memory is being tested) , conceptually driven (do have to focus on the meaning) test would be free recall.

An example of an indirect, conceptually driven test would be free association.

Graphemic cued recall, direct, personally driven test.

* **Theories of Semantic Memory**
  + **Feature Overlap Model**
    - Concepts are not represented by nodes, but rather by a set of features – defining and characteristics.
      * A blue jay will be represented by having wings, nest in trees, etc. Some of these features are defining and some are characteristics
      * Defining – Absolutely crucial, you absolutely have to have these defining features. E.g. Living, have feathers, lay eggs, etc.
      * Characteristics – Fly, relatively small, nests in trees, likes to eat worms.
    - Typicality Effect
      * A blue jay should be verified faster than a penguin when asked if they’re birds. Highly typical items are verified faster.
    - Linguistic hedges
      * “Technically speaking”
        + There’s a match on defining features only; a penguin is a bird but it’s not a great match.
      * “Loosely speaking”
        + There’s a match on characteristic features only; a bat is a bird. It’s not actually a bird but we think of that because they’re bird like.
  + **Prototype Theory**
    - Argues that concepts are represented as an abstraction of certain features.
    - As you experience different examples of a category, you take away the common attributes and that becomes a prototype. That’s not necessarily a specific bird, but rather an abstract idea. A protypical fish is about the size of a trout, has scales, in water, and doesn’t have to be a specific type of fish – a general idea of what a fish looks like.
* Priming
  + Prime -> target
  + Repetition priming
    - Doctor – doctor
  + Semantic Priming
    - Doctor – nurse
    - Sometimes the reaction time can be inhibitory if you’re given a misleading prime.
    - What makes a good prime?
    - There’s no category that is in our semantic memory that starts with “p”
  + Across Trials priming (long term priming)
    - Lexical Decision Task (Given a series of letters, decide as quickly as possible if it’s a word). This only occurs for repetition priming. For semantic priming this will not work at all.
  + Within trials priming (short term priming)
    - How long is the prime presented?
    - If you’re presented with doctor, the critical manipulation is how long you’re exposed to the word doctor. The longer the prime is presented, then reaction time to that is shortened.
  + Expectations (controlled priming)
    - This can explain subliminal semantic priming. Priming generally is automatic, however it can have a controlled aspect to it. Your expectation can effect priming as well.
    - E.g. Given a series of letter to decide if it’s a word, you’re told however that if you first see the word “body” then you should expect a building part. Body – “building part” For others they’re told that if you see body then you should expect to see a building part, but they actually see a body part. Unexpected condition.
      * Body – 250ms - DOOR (Expected)
      * Body – 2 sec – DOOR (expected)
      * Body – 250ms - ARM (not expected) – proves priming is automatic since it’s still faster than no prime at all.
      * Body – 2 sec – ARM – Your response time to arm is now slower than it would be under any other condition
  + Priming with episodic memory
    - Study: city – GRASS
    - Lexical decision task: GRASS (is GRASS a word?) **or** city – GRASS (is GRASS a word?)
  + Priming and sentence contexts
    - Auditory Presentation -> “The man was not surprised when he found several spiders, roaches, and other bugs in the corner of his room” You only think of insects but not bugs like those that are placed in rooms.
    - Visual Presentation -> Given a series of words and you see if it’s a word but they’ll give you context appropriate (bugs), inappropriate (spy), or unrelated (sew). If you’re presented with this lexical decision task at the exact same time as you hear the word bug then you’re primed with the contextually inappropriate meaning and vice versa. Anytime you’re given an ambiguous word (sew) and both meanings are activated so you may not understand the context of the orally presented sentence.
* Reconstructive Memory
  + - You don’t passively soak up material, you’re actively organizing this material.
  + Barlett (1932) “The War of the Ghosts”
    - Native American folk tale. It followed different narrative conventions than that of his English subjects. From a british perspective it became more coherent, the supernatural elements disappeared and ended up being more traditional like.
* Schemas
  + Schemas are organized mental frameworks (General knowledge base) that we use to interpret and filter new information
  + Office schema
    - They setup an atypical office, it did not have objects that offices normally have. There was not one book, bulletin boards, the subjects were asked to write down what they saw in the room. The subjects would be influenced by their schema of what a typical office contains.
    - Good memory for objects in office schema, and in this office
    - Poor memory for objects not in office schema, but in this office
    - False memory of objects in office schema, but not in this office
    - Under 30% remembered it having a bulletin board. 35% claimed they saw a book but there were no books in the room.