Memory

Objective’s for Today’s Class:
- Why do we forget?
- What is amnesia?

If you couldn’t forget, your mind would be filled with meaningless data.

The ability to forget is essential to the proper functioning of memory

Normal Forgetting
- Memory traces gradually decay
  - During any delay a memory is subject to the effects of time and interference from other experiences
- Memories seem to be forgotten because we no longer have the appropriate reminders
- You are more likely to forget something you did not pay attention to when it originally happened
Normal Forgetting

1. Found that most forgetting occurs during the first 9 hours after learning
   - Recall drops from 100% to 50% correct within 20 minutes of list learning
2. After the first several hours – forgetting levels off and slows at that point
3. Decay: loss of information from memory as a result of disuse and passage of time

Reasons for Forgetting

1. Encoding failure
   - Information was either encoded improperly or not at all
2. Storage failure
   - Through the lack of use and rehearsal information is gone
3. Retrieval failure
   - The information is in long-term memory but you are unable to access it
4. Interference
   - Proactive interference
   - Retroactive interference

Proactive Interference

1. Old information interferes with the learning of new information
   - A decrease in accurate recall of information as a result of the effects of previously learned or presented information
   - Old material increases forgetting of the new material
Example

A student studies for a psychology test on Saturday and a sociology test on Sunday. It is Monday and the student is taking the sociology test. He has trouble remembering the sociology information because he confuses it with the psychology information.

- The psychology information was learned first
- The sociology information was learned second
- The first information interfered with remembering the second information

Psychology, learned beforehand, interferes proactively

Another Example of Proactive Interference

Pretend that you are recently out of a long-term relationship but you have found a new flame. Now you are out on that all-important third date with your new love interest. The lights are low, the champagne and strawberries are served. The music in the restaurant is soft and romantic – you are reaching across the table to take your date’s hand. You are looking deeply into his or her eyes, you are about to tell them what a wonderful evening it is and how happy you are to be out with him or her, and then out of your mouth, before you realize it, comes – the name of your ex!!!
**Retroactive Interference**

- New information interferes with recall of old information
  - A decrease in accurate recall of information as a result of the subsequent presentation of different information
  - New material increases forgetting of the older material

**Example**

A student studies for a psychology test on Saturday and a sociology test on Sunday. It is Monday and the student is taking the psychology test. He has trouble remembering the psychology information because he confuses it with the sociology information.

- The psychology information was learned first
- The sociology information was learned second
- The second information interfered with remembering the first information

**Sociology, learned afterwards, interferes retroactively**
Another Example of Retroactive Interference

- Pretend that you've been sneaking around on your long-term girlfriend/boyfriend for a couple of months. One day, while talking to your significant other in some casual context, you address them by the name of your secret lover.
- New information has interfered with your recall of older information.

Severe Forms of Memory Loss

Amnesia

- Severe loss or deterioration of memory
- People with amnesia tend to have poor factual memories, but intact procedural memories

  Amnesiacs show preserved performance on tests of implicit memory (which do not require conscious recollection for successful performance)

  On tests of explicit memory, amnesiacs show much more severely impaired performance (requires that the individual recognize the correct answer and be aware that long-term memory is being tapped)
Two Types of Amnesia

- **Retrograde Amnesia**
  - Loss of memory for events that occurred shortly before the brain damage
  - People who find it hard to retrieve memories prior to an incident in which they suffer damage to the head
  - Sometimes people never remember the seconds leading up to the incident

- **Anterograde Amnesia**
  - The inability to store new long-term memories
  - People who find it hard to remember ongoing events after suffering damage to the head
  - They do not tend to forget their childhood or who they are, but have trouble remembering day-to-day events

Are Memories Accurate?

False Memory Formation
False Childhood Memories
Imagination Inflation
Impossible Memories