

# General Psychology

## Notes - Memory

**These are general notes designed to assist students who are regularly attending class and reading assigned material: they are supplemental rather than exhaustive and reflect general concepts.**

### I. Basic Memory Processes:

- A. **Encoding** - change information into a form that the memory system uses
- B. **Storage** - maintaining information over a period of time
- C. **Retrieval** - locating information being stored in memory and bringing into awareness

### II. Three Memory Systems

- A. **Sensory Memory** - sensory inputs are briefly held for approximately 1/2 - 2 seconds in sensory registers. Information is encoded/processed and transferred into short-term memory or decays and is lost forever.

- 1. **Icon** - visual memory and lasts for approximately 1/2 second
- 2. **Echo** - auditory memory and lasts for approximately 2 seconds
- 3. **De ja vu'** - memory theorists believe this is caused by a short circuit in sensory memory and the information is being reprocessed which is what gives you that uncanny feeling that you have experienced something before. You have, only a few seconds ago.

- B. **Short term Memory** - also referred to as working information

- 1. Information stays here for approximately **18-30 seconds**.
- 2. Limited capacity - **7 items + or -2 (5-9 items)**.
- 3. Helps you think & solve problems by organizing and integrating information.
- 4. Strategies can be used to help increase short-term capacity and duration of time.  
**Chunking** - organizing several bits of information into one piece

Ex: area codes and exchanges of phone numbers

**Maintenance Rehearsal** - rote repetition over and over again

**Elaborative Rehearsal** - associate new information & existing knowledge

- C. **Long-term Memory** - Storage of Information Indefinitely

- 1. Theoretically has an unlimited capacity
- 2. 3 types
  - \* **Semantic memories** - general knowledge, facts, and concepts
  - \* **Procedural memories** - how to do something
  - \* **Episodic memories** - personally relevant experiences

### III. Biological Bases of Memory

- 1. Short-term memory involves changes in the neurochemistry
  - \* increased synaptic responsiveness
  - \* Neurotransmitters directly involved - glutamate & acetylcholine
- 2. Long-term memory - involves structural changes in the dendrite
  - \* 2 week consolidation/stabilization period before memory becomes permanent

3. Hippocampus - gateway to memory
  - \* episodic and semantic memories
4. Other areas: regions of the cerebral cortex (the temporal lobe) and the thalamus

#### IV. Theories of Forgetting

1. **Decay Theory**: "don't use it you lose it." Unused material fades with time.
2. **Interference**: one piece of information impairs the recollection of another
  - Retroactive interference**: new learning/information interferes with old
  - Proactive interference**: old learning/information interferes with new
3. **Motivated forgetting** - Repression - information is psychologically painful
4. **Retrieval Cue Failure** - Can't recall how you stored or filed the information
5. **State Dependent Memory** - Not in the same psychological or physical state when you first learned the material
6. **Organic/biological problems** caused by depression, malnutrition, Alzheimer

#### V. Improving Memory

1. **Rehearsal**:
  - Maintenance** - rote repetition
  - Elaborative** - association with previously learned information
2. **Deep Processing** - make information personally relevant
3. **Distributed practice** (small quantities over time) - **vs.** - **massed practice**  
\*\*\*DO NOT CRAM\*\*\*
4. **Mnemonics** - Strategies for organizing information so it can be remembered
  - \* words, rhymes or jingles
5. Effective reading of the text - PQ4R
  - \* **Preview** - survey the chapter before you read
  - \* **Question** - ask yourself questions
  - \* **Read**
  - \* **Reflect**
  - \* **Recite**
  - \* **Review**
6. Take good lecture notes & rewrite notes to practice learning the information.