

## Chapter 10 Memory and Thought

### Sec 1: Taking in and Storing Information

Memory – input, storage, and retrieval of what has been learned or experienced

1. Encoding – transforming of information so the nervous system can process it
2. Storage – process by which information is maintained over time
3. Retrieval – process of obtaining info that has been stored in memory

### Three Stages of Memory

1. Sensory Memory – very brief memory storage following stimulation of a receptor
2. Short-term Memory – things you have in your conscious mind at any one moment
  - A. Maintenance Rehearsal – repeating info to oneself without attempting to find meaning in it
    - i. Short-term memory lasts a bit less than 20 sec without rehearsal
  - B. Chunking – grouping of incoming info
    - i. Short-term memory can hold only 7 unrelated items
  - C. Primacy-Recency Effect – are better able to recall info presented at the beginning and end of a list

3. Long-term Memory – storage of info for an extended period of time
  - A. Info is stored according to features
  - B. Types of Long-term Memory
    - i. Semantic Memory – knowledge of language
    - ii. Episodic Memory – knowledge of events of our life
    - iii. Declarative Memory – involves both semantic and episodic memory
    - iv. Procedural (Implicit) Memory – learned skills that do not require conscious recollection

## Sec 2: Retrieving Information

Recognition - person identifies an object, idea, or situation as one he or she has or has not experienced before

Recall – the active reconstruction of info

1. Reconstructive Processes – memories may be altered or distorted depending on our experiences, attitudes, and inferences from other info
2. Confabulation – a person remembers info that was never stored in memory
3. Eidetic Memory – “photographic memory”, can recall specific details from a picture, a page, or a scene briefly viewed

## 4. Relearning

Forgetting – when info that once entered long-term memory cannot be retrieved

1. Decay – fading away of memory over time
2. Interference – memory being blocked or erased by previous or subsequent memories
  - a. Proactive – an earlier memory blocks you from remembering later info
  - b. Retroactive – a later memory (new info) blocks you from remembering info learned earlier
3. Repression – a person may subconsciously block memories of an embarrassing or frightening experience
4. Amnesia – loss of memory that may occur after a blow to the head, brain damage, drug use, or stress
  - a. Infant Amnesia – we cannot remember most events prior to 3 years of age

## Improving Memory

1. Elaborative Rehearsal – relate new info to what is already known
2. The more senses and experiences you use when trying to memorize something, the more likely it is that you will be able to retrieve it
3. Overlearn – rehearse things even after you think you know it
4. Avoid studying similar materials together

5. Study a little at a time
6. Mnemonic Devices – techniques for using associations to memorize info

## Ch 11 Thinking and Language

### Sec 1: Thinking and Problem Solving

Thinking - changing and reorganizing the info stored in memory in order to create new info

1. Units of Thought
  - a. Image – mental representation of a specific event or object
  - b. Symbol – a sound or design that represents an object or quality
  - c. Concept – a label for a class of objects or events that share common attributes
  - d. Prototype – a representative example of a concept
  - e. Rule – a statement of relation between concepts
2. Kinds of Thinking
  - a. Directed (Convergent) Thinking – a systematic and logical attempt to reach a specific goal
  - b. Nondirected (Divergent) Thinking – a free flow of thoughts with no particular goal or plan, and depends more on images
  - c. Metacognition – thinking about thinking

Problem Solving – bridge the gap, mentally, between a present situation and a desired goal

1. Strategies
  - a. Break things down
  - b. Work backward
  - c. Examine various solutions
2. Algorithms – step-by-step procedure for solving a problem
3. Heuristics – strategies used to simplify a problem allowing one to solve it more quickly and easily
4. Obstacles to Problem Solving
  - a. Mental Set – habitual strategy or pattern of problem solving
    - i. Rigidity – when a set interferes with problem solving
  - b. Functional Fixedness – inability to imagine new uses for familiar objects

Creativity – the ability to use information in such a way that the result is somehow new, original, and meaningful

1. Flexibility – the ability to overcome rigidity
2. Recombination – mentally arranging the elements of a problem in order to arrive at a novel solution
3. Insight – sudden emergence of a solution by recombination of elements