

AP Psychology Outline
Chapter 7: Memory

Red – Definition
Blue - Important Points
Green - Important People & Contributions

1. Memory
 - a. **Encoding** – Forming Memory Code.
 - b. **Storage** – Maintaining Encoded Information in Memory over Time.
 - c. **Retrieval** – Recovering Information from Memory Stores.
 - d. Forgetting is due to deficiencies in any of 3 Processes in Memory.
2. Encoding: Getting Information into Memory
 - a. **Attention** – Focusing Awareness on a narrowed range of Stimuli or Events.
 - i. You need to pay attention to Information if you intend to remember it.
 - ii. **Focusing your attention in 2 or more places at once causes large reduction in memory performance and motor performance.**
 - b. Levels of Processing
 - i. **Structural Encoding = Shallow Processing** – Emphasizes the Physical Structure of the Stimulus.
 - ii. **Phonemic Encoding = Intermediate Processing** - Emphasizes what a word sounds like.
 - iii. **Semantic Encoding = Deep Processing** – Emphasizes the meaning of Verbal Input.
 - iv. **Levels-of-Processing Theory** – Proposes that deeper levels of processing result in Longer-Lasting Memory codes.
 1. **Deeper Processing leads to Enhanced Memory**
 - c. Enriching Encoding
 - i. **Elaboration** – Linking a Stimulus to other information at the time of Encoding.
 - ii. **Imagery** – Creation of visual images to represent the words to be remembered.
 1. Easier to form Images of Concrete Objects instead of Abstract Objects.
 - iii. **Dual-Coding Theory** – Memory is Enhanced by Forming Semantic and Visual codes, since either can lead to Recall.
 - iv. **Self-Referent Coding** – Deciding how or whether Information is Personally Relevant.
3. Storage: Maintaining Information in Memory
 - a. **Sensory Memory** – Preserves Memory in its Original Sensory form for a Brief Time, Usually only a Fraction of a Second.
 - b. **Short-Term Memory (STM)** – A Limited-Capacity Store that can Maintain Unrehearsed Information for up to about 20 Seconds.
 - c. **Rehearsal** – The Process of Repetitively Verbalizing or Thinking about the Information.
 - i. Rehearsal Stores Information in your Short Term Memory for a Long Time.
 - d. Capacity of Storage
 - i. **George Miller** – People could recall only about 7 Items in tasks that require Short-Term Memory.
 - ii. **Chunk** – A Group of Familiar Stimuli Stored as a Single Unit.
 1. Storing Information in Similar Chunks helps for Recall.
 - e. Short-Term Memory as “Working Memory”
 - i. **Alan Baddeley** – Model of “Working Memory” of Short-Term Memory.
 1. **Phonological Loop** – Facilitate the Acquisition of Language.

2. **Visuospatial Sketchpad** – Permits people to Temporarily Hold and Manipulate Visual Images.
 3. **Central Executive System** – Controls Deploying, Switching, and Dividing Attention.
 4. **Episodic Buffer** – Temporary Limited-Capacity storage for Integrating Working Memory to Long-Term Memory.
- f. **Long-Term Memory (LTM)** – An Unlimited Capacity Store that can hold Information over Lengthy Periods of Time.
- i. **Long-Term Memory is Stored Permanently, sometimes there is trouble Retrieving it.**
 - ii. **Flashbulb Memories** – Usually Vivid and Detailed Recollections of Momentous Events.
 1. Often Inaccurate Memories.
- g. Knowledge Represented & Organized in Memory
- i. **Conceptual Hierarchy** – A Multilevel Classification System Based on Common Properties Among Items.
 1. Greatly Increases Memory Recall by Grouping/Charting Information.
 - ii. People “Cluster” Items that are Similar to each other to remember them.
 - iii. **Schema** – An Organized Cluster of Knowledge about a Particular Object or Event Abstracted from Previous Experience with the Object or Event.
 1. **People are more likely to Remember things that are Consistent with their Schemas than Things that are not.**
 - iv. **Semantic Network** – Consists of Nodes Representing Concepts, Joined Together by Pathways that Link Related Concepts.
 1. **Related Words are Easier to remember as how closely related they are.**
 - v. **Parallel Distributed Processing Models (PDP)** – Cognitive Processes Depend on Patterns of Activation in Highly Interconnected Computational Networks that Resemble Neural Networks.
 1. **Remembering regarding Patterns across a Network.**
4. Retrieval: Getting Information out of Memory
- a. Cues to Aid Retrieval
 - i. **Tip-Of-The-Tongue Phenomenon** – The Temporary Inability to Remember Something You Know, Accompanied by a Feeling that It’s “Just out of Reach”
 1. **Partial Recollections often lead in the Right Direction.**
 - ii. **Misinformation Effect** – Occurs when Participants Recall of an Event they Witnessed is Altered by Introducing Misleading Post-Event Information.
 - iii. **Imagination Inflation** – A few moments of belief that a person has had an experience they haven’t allows them to make up details that didn’t occur.
 - iv. Sometimes Advertising Accurate Information can Lead to belief in Inaccurate Information.
 1. Advertising that “Advil is good for you heart is false” after a few days people believe “Advil’s are good for your Heart.”
 - b. Source Monitoring & Reality Monitoring
 - i. **Marcia Johnson**
 - ii. **Source Monitoring** – Involves Making Attributions about the Origins of Memories.
 - iii. **Source Monitoring Error** – Occurs when a Memory Derived from one Source is Misattributed to Another Source.
 - iv. **Reality Monitoring** – Process of Deciding Whether Memories are Based on External Sources (One’s Perception of Actual Events) Or Internal Sources (One’s Thoughts and Imaginations.)
5. Forgetting: When Memory Lapses
- a. **Hermann Ebbinghaus**
 - i. **Nonsense Syllables** – Consonant-Vowel-Consonant Arrangements that Don’t Correspond to Words.
 - ii. **Forgetting Curve** – Graphs Retention and Forgetting Over Time.

1. The More Meaningful the Material, the Slower the Forgetting Curve.
- b. Measures of Forgetting
 - i. **Retention** – Refers to the Proportion of Material Remembered.
 - ii. **Recall** – Measure of Retention Requires Subjects to Reproduce Information from an Array of Options.
 - iii. **Recognition** – Measure of Retention Requires Subjects to Select Previously Learned Information from an Array of options.
 - iv. **Relearning** – Measure of Retention Requires a Subject to Memorize Information a Second Time to Determine How Much Time or How Many Practice Trials are Saved by Having Learned it Before.
- c. Why We Forget
 - i. Ineffective Encoding
 1. **PseudoForgetting** – You don't learn something well due to a lack of Attention.
 - ii. Decay
 1. **Decay Theory** – Forgetting Occurs because Memory Traces Fade with Time.
 - iii. Interference
 1. **Interference Theory** – People Forget Information because of Competition from other Material.
 2. **Retroactive Inference** – Occurs when New Information Impairs the Retention of Previously Learned Information.
 3. **Proactive Interference** – Occurs when Previously Learned Information Interferes with the Retention of New Information.
 - iv. Retrieval Failure
 1. **Encoding Specificity Principle** – The Value of a Retrieval Cue Depends on How Well it Corresponds to the Memory Code.
 2. **Transfer-Appropriate Processing** – Occurs when the Initial Processing of Information is Similar to the Type of Processing Required by the Subsequent Measure of Retention.
 - v. Motivated Forgetting
 1. **Repression – Freud Theory** – Refers to keeping Distressing Thoughts and Feelings Buried in the Unconscious.
6. Recovered Memory Controversy
 - a. Many People are Coming out with Stories of Abuse as Children that has been Repressed for years.
 - b. Recovered Memories are Usually Not very Accurate.
 - c. False memories can be Conjured by Suggestibility and Imagination Inflation.
 - d. But Some Claims are True and Accurate.
 - e. All the Controversy goes to Show that our Memory is Unreliable some of the Time.
7. Physiology of Memory
 - a. **Eric Kandel**
 - i. Memory Formation Results in Alterations in Synaptic Transmission at Specific Sites.
 - ii. Synapses Become closer together & Stronger.
 - b. Adrenal Hormones Effect Memory Storage by Modulating Activity in the Amygdala.
 - c. **Long-Term Potentiation (LTP)** – A Long-Lasting Increase in Neural Excitability at Synapses Along a Specific Neural Pathway.
 - d. **Long-Term Depression (LTD)** - A Long-Lasting Decrease in Neural Excitability at Synapses Along a Specific Neural Pathway.
 - i. Could be a Cause of Forgetting.
 - e. **Richard Thompson**
 - i. Memories Create Unique, Reusable Pathways in the Brain along which Signals Flow.
8. Anatomy of Memory

- a. **Retrograde Amnesia** – Involves the Loss of Memories for Events that Occurred prior to the Onset of Amnesia.
 - b. **Anterograde Amnesia** – The Loss of Memories for Events that Occur after the Onset of Amnesia.
 - c. **Hippocampus Accounts for much Long-Term Memory through Consolidation.**
 - d. **Consolidation** – A Hypothetical Process Involving the Gradual Conversion of Information into Durable Memory Codes Stored in Long-Term Memory.
 - e. **Amygdala seems to be Critical for Formation of Learned Fears.**
 - f. Memory Takes Place all over the Brain.
9. Systems & Types of Memory
- a. **Non-Declarative Memory System** – Houses Memory for Actions, Skills, Conditioned Responses, and Emotional Responses.
 - b. **Declarative Memory System** – Handles Factual Information.
 - c. **Endel Tulving**
 - i. **Episodic Memory System** – Chronological Recollections of Personal Experiences.
 - 1. **Like an Autobiography.**
 - ii. **Semantic Memory System** – General Knowledge that is not tied to the Time when the Information was Learned.
 - 1. **Like an Encyclopedia.**
 - d. Prospective Vs. Retrospective Memory
 - i. **Prospective Memory** – Remembering to Perform Actions in the Future.
 - 1. **Cues Make it Easier to Remember Prospective Tasks.**
 - ii. **Retrospective Memory** – Remembering Events from the Past or Previously Learned Information.