

Chapter 7

The Nature of Memory

What is Memory?

- Memory
 - The retention of information over time

What is Memory?

- Encoding
 - How information gets into memory
- Storage
 - The retention of information over time
- Retrieval
 - Bringing information out of memory storage

Memory Encoding

- Rehearsal
 - The conscious repetition of information that increases the length of time that information stays in memory
- Depth of processing
 - Deep processing of stimuli produces better memory of them
- Elaboration
 - The extensiveness of processing at any given depth of memory

Organization: Chunking

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Memory Storage

- Atkinson-Shiffrin theory
 - Memory involves a sequence of three stages
 - Sensory memory
 - Short-term (working) memory
 - Long-term memory

Sensory Memory

- Sensory memory
 - A form of memory storage that hold information from the world in its original sensory form for only an instant, not much longer than the brief time it is exposed to the visual, auditory, and other senses

Sensory Memory

- Echoic memory
 - Auditory sensory memory in which information is retained for up to several seconds
- Iconic memory
 - Visual sensory memory in which information is retained for only about 1/4 second

Sensory Memory

Sensory Memory

Sensory Memory

Working (Short-Term) Memory

- Working memory
 - A limited-capacity storage system in which information is retained for as long as 30 seconds, unless it is rehearsed, in which case it can be retained longer
- Memory span
 - The number of digits an individual can report back in order after a single presentation of them

Long Term Memory

- Long-term memory
 - A relatively permanent type of memory that holds huge amounts of information for a long period of time

Memory's Contents

- Declarative memory
 - The conscious recollection of information, such as specific facts or events
 - Can be verbally communicated
- Nondeclarative memory
 - Memory that is affected by prior experience without that experience being consciously recollected
 - Cannot be verbally communicated

Declarative Memory

- Episodic memory
 - The retention of information about the where and when of life's happenings
- Semantic memory
 - A person's knowledge about the world
 - General academic knowledge, meanings of words, important places/dates, etc.

Representing Memory

- Network theories

- Our memories can be envisioned as a complex network of nodes that stand for labels or concepts
- Schema theories
 - When we reconstruct information, we use existing concepts (schemas) to organize and interpret information

Memory Retrieval

- Tip-of-the-tongue phenomenon
 - A type of “effortful retrieval” that occurs when people are confident they know something but just can’t quite seem to pull it out of memory

Memory Retrieval

- Serial position effect
 - Recall is superior for the items at the beginning of a list and the end of a list
- Primacy effect
 - Superior recall for items at the beginning of a list
- Recency effect
 - Superior recall for items at the end of a list

Serial Position Effect

Retrieval Cues

- Recall
 - A memory measure in which the individual must retrieve previously learned information
 - Essay test
- Recognition
 - A memory measure in which the individual only has to identify (“recognize”) learned items
 - Multiple choice test

Retrieval Cues

- Encoding specificity principle
 - Associations formed at the time of encoding or learning tend to be effective retrieval cues
- Priming
 - Activating particular connections or association in memory

Emotional Memories

- Flashbulb memories
 - Memories of emotionally significant events that people often recall with more accuracy and vivid imagery than everyday events
- Personal trauma
- Repressed memories
- Mood-congruent memories

Forgetting

Forgetting

- Interference theory
 - We forget because other information gets in the way of what we want to remember
- Proactive interference
 - Material that was learned earlier disrupts the recall of material learned later
- Retroactive interference
 - Material learned later disrupts retrieval of information learned earlier

Amnesia

- Anterograde amnesia
 - Affects the retention of new information or events
 - Doesn't affect information learned before the onset of the condition
- Retrograde amnesia
 - Memory loss for a segment of the past but not for new events

Memory and Study Strategies

- Effective strategies
 - Pay attention and minimize distraction
 - Understand the material rather than rote memorize it
 - Organize what you put into memory

Improving Everyday Memory

- Engage in adequate rehearsal
- Distribute practice and minimize interference
- Emphasize deep processing and transfer-appropriate processing
- Organize information
- Use acronyms
- Use verbal mnemonics
- Use visual mnemonics

Effective Strategies

- Ask yourself questions
- Spread out and consolidate your learning
- Cognitively monitor your progress
- Be a good time manager and planner