



Memory

Introduction to Psychology

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Memory

❖ Encoding

- The process through which information is converted into a form that can be entered into memory.

❖ Storage

- The process through which information is retained in memory.

❖ Retrieval

- The process through which information stored in memory is located.

❖ Information-Processing Approach

- An approach to understanding human memory that emphasizes the encoding, storage, and later retrieval of information.

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5

A

9

K

F

4

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❖ What are the colors in my signature?



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Sensory memory

❖ Sensory Memory

- A memory system that retains representations of sensory input for brief periods of time .
- Experiment conducted by Sperling (1960)

❖ Mechanism of sensory memory

- **Iconic Memory**
- **Echoic Memory**

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UK 17 E 3995

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❖ Tell me the number just displayed ?

Short -Term Memory (STM)



- ❖ A memory system that holds limited amounts of information for relatively short periods of time .
- ❖ Mechanism of STM
 - *Phonological store*
 - Representations of words, reflecting how they sound
 - *Rehearsal mechanism*
 - Refreshes the contents of the phonological store through repetition of these words

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IBFIMBWBMATW IAC

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❖ Recall the letters

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IAC

IBF, IMB, WBM, ATW,

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❖ Recall the letters

Short-Term Memory (STM)



❖ Capacity of STM

- Seven to nine separate pieces of information (chunks)

❖ Duration of STM

- Not very long
- Usually 20 – 30 sec

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Display

Bombay

Rather

Positive

During

Display

Positron

Saturn

Definition

Memory

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❖ Reproduce the words

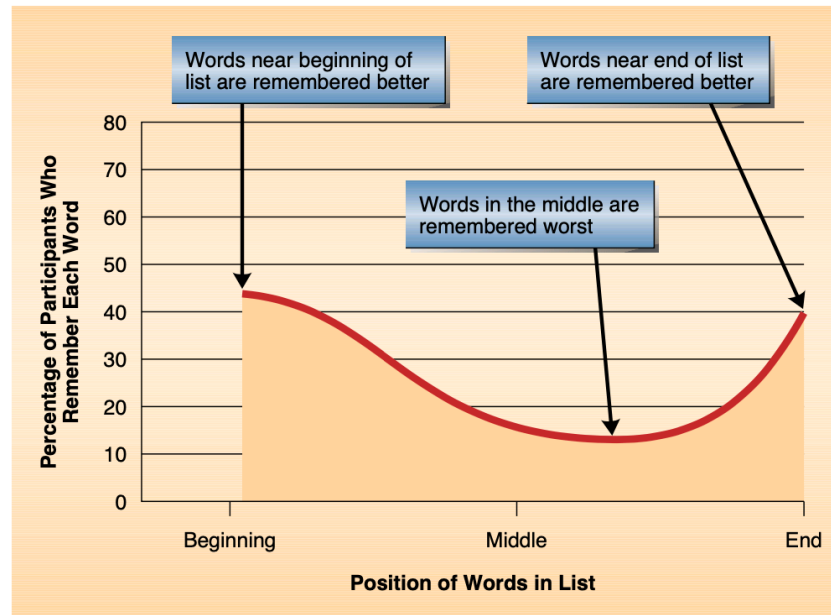
Short -Term Memory

❖ Short -Term Memory

- A memory system that holds limited amounts of information for relatively short periods of time .

❖ Serial Position Effect (Curve) :

- The greater accuracy of recall of words or other information early and late in a list than of words or information in the middle of the list .



Long-Term Memory

❖ Long-Term Memory

- A memory system for the retention of large amounts of information over long periods of time.
- **Tip-of-the-Tongue Phenomenon**
 - The feeling that we can almost remember some information we wish to retrieve from memory.

❖ *Basic Operation*

- **Elaborative Rehearsal :**
 - Rehearsal in which the meaning of information is considered and the information is related to other knowledge already present in memory.
- **Levels of Processing View**
 - A view of memory suggesting that the greater the effort expended in processing information, the more readily it will be recalled at later times.

Retrieval



❖ Our ability to locate information previously stored in memory .

➤ *organization* . In general, the better organized materials are at the time they are stored, the easier it is to retrieve them later on

broccoli
elevator
bicycle
watermelon

apple
bus
potato
lemon

parsley
submarine
grapes
turnip

Fruits
watermelon
apple
lemon
grapes

Vegetables
broccoli
potato
parsley
turnip

Vehicles
elevator
bicycle
bus
submarine

➤ *hier- archies*—classification systems that move from inclusive to increasingly spe- cific levels

Retrieval Cues

- ❖ **Retrieval Cues :** Stimuli associated with information stored in memory that can aid in its retrieval .
- ❖ **Context -Dependent Memory :**
 - The fact that information entered into memory in a particular context or setting is easier to recall in that context, or in a similar context, than in others .
- ❖ **State -Dependent Retrieval :**
 - The greater ease of retrieval of information stored in long-term memory when our internal state is the same as it was when the information was first entered into memory .
- ❖ **Mood -Dependent Memory :**
 - The finding that what we remember while in a given mood may be determined in part by what we learned when previously in that same mood .
- ❖ **Mood Congruence Effects :**
 - Our tendency to notice or remember information congruent with our current mood .

Forgetting

❖ **Forgetting** is the apparent loss or modification of information already encoded and stored in an individual's memory. It is a spontaneous or gradual process in which old memories are unable to be recalled from memory storage.

❖ **The Trace Decay Hypothesis**

- Perhaps the simplest view of forgetting is that information entered into long-term memory fades or decays with the passage of time.

❖ **Retroactive Interference :**

- Interference with retention of information already present in memory by new information being entered into memory.

❖ **Proactive interference :**

- Previously learned information present in long-term memory interferes with information you are learning

- ❖ **Amnesia**: Loss of memory stemming from illness, accident, drug abuse, or other causes .
 - **Retrograde Amnesia**: Loss of memory of events that occurred before an amnesia-inducing event .
 - **Anterograde Amnesia**: The inability to store in long-term memory information that occurs after an amnesia-inducing event .

- ❖ **H.M. Case study**

- ❖ **Infantile Amnesia**: Our inability to remember experiences during the first two or three years of life .

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❖ Learning :

- Any relatively permanent change in behaviour (or behaviour potential) resulting from experience .