

# Memory

*Dr. Radwan Bani Mustafa*

*Abdullah AlZibdeh*

## Introduction

In this summary, we discuss reconstructing the past, memory and the power of suggestion, in pursuit of memory, the three-box model of memory, how we remember, why we forget and autobiographical memories. Collected questions are at the end.

## Reconstructing the past

*The Manufacture of Memory; The Fading Flashbulb; The Conditions of Confabulation*

### The Manufacture of Memory

Memory is selective. Recovering a memory is not passive process, like playing a videotape; memory involves inferences that fill in gaps in recall. However, we are often unaware we have made such inferences.

**Source Amnesia:** The inability to distinguish what you originally experienced from what you heard or were told later about an event.

### The Conditions of Confabulation

**Confabulation:** Confusion of an event that happened to someone else with one that happened to you, or a belief that you remember something when it never actually happened.

Confabulation is most likely when:

- You have thought about the event many times
- The image of the event contains many details
- The event is easy to imagine
- You focus on emotional reactions to the event rather than what actually happened.

## Memory and the Power of Suggestion

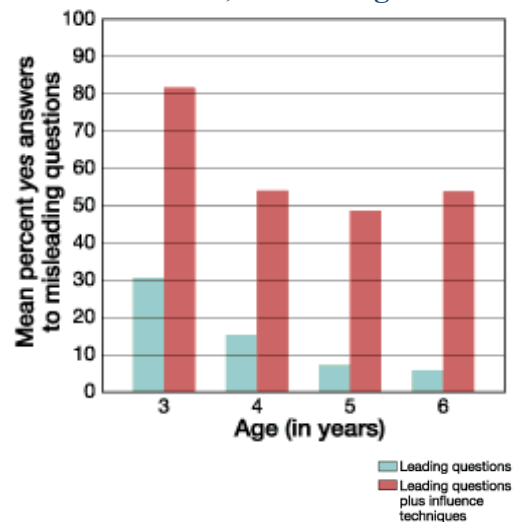
The Eyewitness on Trial; Children's Testimony; Memory Under Hypnosis

### Children's Testimony

If asked if a visitor committed acts that had not occurred, few 4-6 year olds said yes. 30% of 3-year olds said yes.

When investigators used techniques taken from real child-abuse investigations, most children said yes.

**Social Pressure, False Allegations**



### Memory Under Hypnosis

**Hypnosis:** A procedure in which the practitioner suggests changes in sensations, perceptions, thoughts, feelings, or behavior of the subject, who cooperates by altering his or her normal cognitive functioning.

Errors and pseudo-memories are so common under hypnosis that the APA opposes use of hypnosis-based testimony in courts of law; few courts allow it.

## In Pursuit of Memory

Measuring Memory; Models of Memory

### Measuring Memory

**Explicit Memory:** Conscious, intentional recollection of an event or of an item of information.

**Implicit Memory:** Unconscious retention in memory, as evidenced by the effect of a previous experience or previously encountered information on current thoughts or actions.

## Explicit Memory

**Recall:** The ability to retrieve and reproduce from memory previously encountered material.

**Recognition:** The ability to identify previously encountered material.

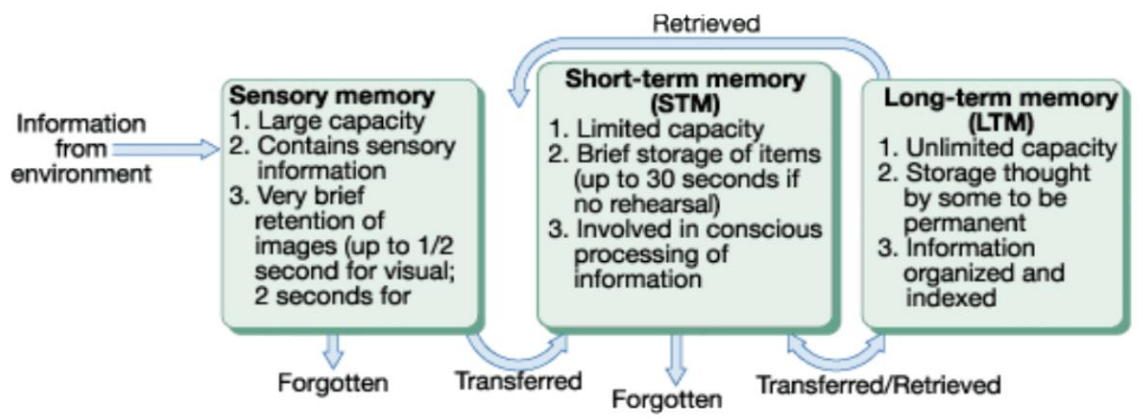
## Implicit Memory

**Priming:** A method for measuring implicit memory in which a person reads or listens to information and is later tested to see whether the information affects performance on another type of task.

**Relearning:** A method for measuring retention that compares the time required to relearn material with the time used in the initial learning of the material.

## The Three-Box Model of Memory

Sensory Memory: Fleeting Impressions; Short-term Memory: Memory's Scratch Pad; Long-term Memory: Final Destination



## Sensory Memory: Fleeting Impressions

**Sensory Memory:** A memory system that momentarily preserves extremely accurate images of sensory information.

**Pattern Recognition:** The identification of a stimulus on the basis of information already contained in long-term memory.

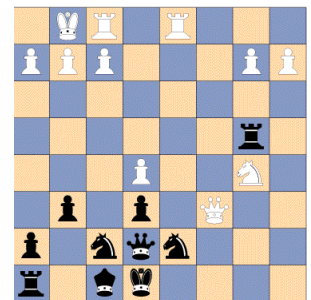
### Short-term Memory: Memory's Scratch Pad

**Short-Term Memory (STM):** In the three-box model of memory, a limited capacity memory system involved in the retention of information for brief periods; it is also used to hold information retrieved from long-term memory for temporary use.

**Chunk:** A meaningful unit of information; it may be composed of smaller units.

### The Value of Chunking

You have 5 seconds to memorize as much as you can. Then, draw an empty chess board and reproduce the arrangement of pieces



### Long-term Memory: Final Destination

#### **Procedural memories** “Knowing how”

Memories for performance of actions or skills.

#### **Declarative memories** “Knowing that”

Memories of facts, rules, concepts, and events; includes semantic and episodic memory.

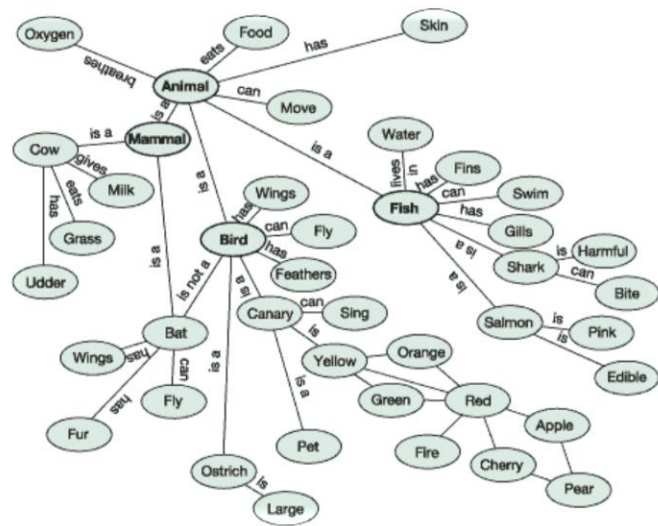
#### **Semantic memories**

General knowledge, including facts, rules, concepts, and propositions.

## Episodic memories

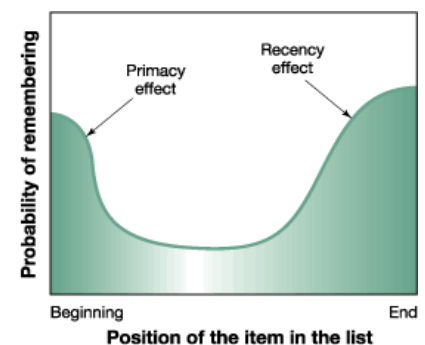
Personally experienced events and the contexts in which they occurred.

## Conceptual Grid



## Serial-Position Effect

This is the tendency for recall of first and last items on a list to surpass recall of items in the middle of the list.



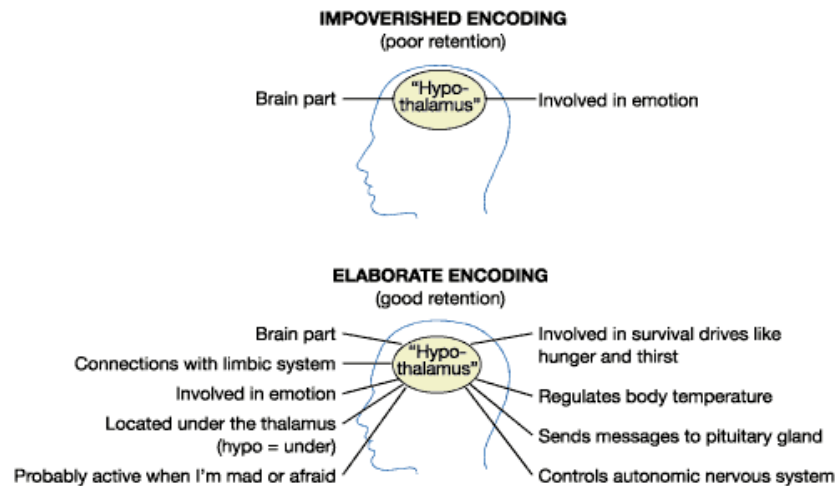
## How We Remember

Effective Encoding; Rehearsal; Mnemonics

## Rehearsal

**Maintenance Rehearsal:** Rote repetition of material in order to maintain its availability in memory.

**Elaborative Rehearsal:** Association of new information with already stored knowledge and analysis of the new information to make it memorable.



## Why We Forget

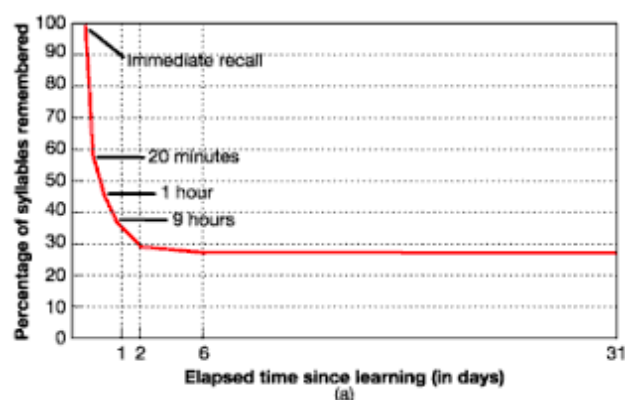
Decay; Replacement; Interference; Cue-dependent Forgetting; Psychogenic Amnesia

### Decay

**Decay Theory:** The theory that information in memory eventually disappears if it is not accessed; it applies more to short-term than to long-term memory.

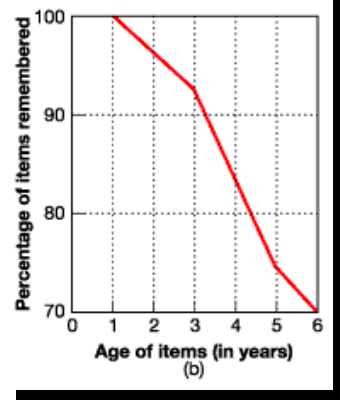
### Forgetting Curve

Herman Ebbinghaus tested his own memory for nonsense syllables. Forgetting was rapid at first and then tapered off.



## Remembering Over Years

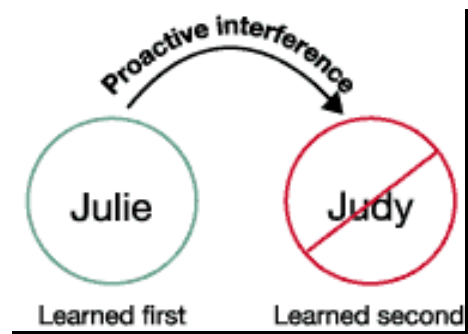
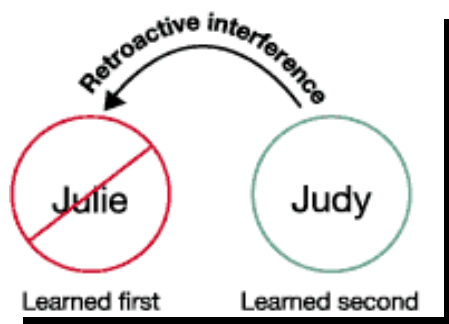
Marigold Linton tested her own memory for personal events over a period of several years. Retention fell at a gradual but steady rate.



## Interference

**Retroactive Interference:** Forgetting that occurs when recently learned material interferes with the ability to remember similar material stored previously.

**Proactive Interference:** Forgetting that occurs when previously stored material interferes with the ability to remember similar, more recently learned material.



## Cue-dependent Forgetting

**Cue-Dependent Forgetting:** The inability to retrieve information stored in memory because of insufficient cues for recall.

**State-Dependent Memory:** The tendency to remember something when the rememberer is in the same physical or mental state as during the original learning or experience.



## Psychogenic Amnesia

It is the partial or complete loss of memory (due to nonorganic causes) for threatening information or traumatic experiences.

## **Autobiographical Memories**

Childhood Amnesia: The Missing Years; Memory and Narrative: The Stories of Our Lives

### Childhood Amnesia: The Missing Years

**Childhood Amnesia:** The inability to remember events and experiences that occurred during the first two or three years of life.

Cognitive explanations for that include:

- Lack of sense of self
- Impoverished encoding
- A focus on the routine
- Different ways of thinking about the world

## **What is Self-Awareness?**

- Observing your thoughts or feelings
- Witnessing yourself from a neutral perspective
- Being aware of what you are doing by noticing the sensations, emotions, or thoughts you experience

## **Self-Awareness is NOT Being**

- Self-conscious
- Analytical
- Blaming
- Self-critical

### **Past-papers**

1. which of the followings represents the stage of memory in which environmental events are transcribed and stored in our brains: a- encoding stage b- storage stage c- retrieval stage d- explicit memory e- implicit memory
2. when we do rehearsal which of the following codes are favored
3. True about memory mechanism

### **Answers**

1. Storage stage (?)
2. Phonological
3. Encode, store, retrieve