

UNIT 4

MEMORY AND FORGETTING

Nature and Definition of Memory

Memory: is the process by which we *encode, store & retrieve info* (what was learned earlier).

- Simply memory is remembering previously learned experience.
- Memory process is the mental activities we perform to put info in the memory, to keep it there & to make use of it later.
- It indicates how info is represented in memory, how long it lasts & how it is organized.

Process of Memory

Memory process involves three basic steps. These are:

A.Encoding: refers to the process by w/h infn is initially recorded in form usable to memory.

- Transform a sensory input in to a form or a memory code that can be further processed.

B.Storage: involves keeping/maintaining infn in the memory.

- It is the location in memory system in w/h materials are saved.

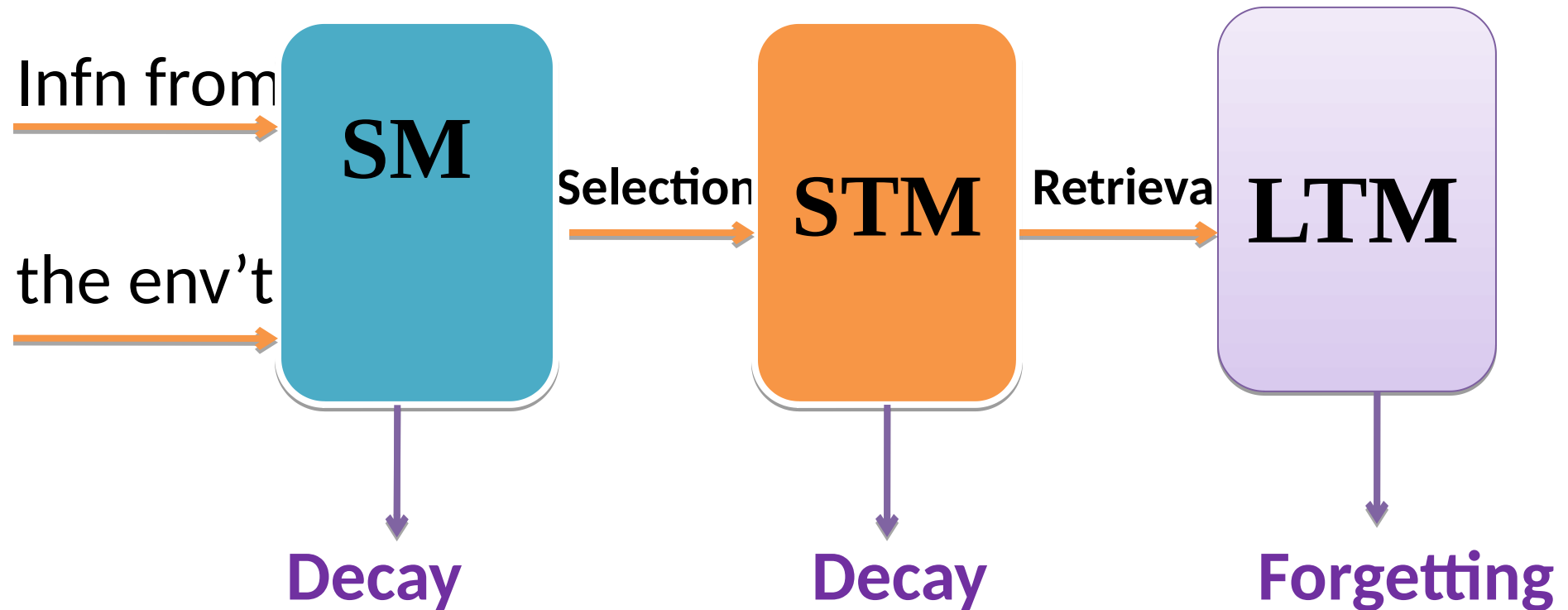
C. Retrieval: it involves the use of stored infn when it is needed.

- Materials from storage memory brought in to awareness & used.

Structures/Stages/Forms/of memory

- According to Atkinson & Sheferin, human memory consists of three different but interacting systems. These are:
 - ¬¬ Sensory memory/registrar(SM)
 - ¬¬ Short-term memory (STM)
 - ¬¬ Long- term memory (LTM)

Structures of Memory



1. Sensory Memory/ Registrar (SR)

- It is a component of the memory system that receives inf from the env't.
- It is the entryway to memory & the first inf storage area.
- The **type** of inf is a very accurate & complete representation of the env't but it is unprocessed.
- **Capacity** of SM is very large, more inf than we can possibly handle at once.
- **Duration** if the inf is visual inf it stores in the **iconic memory** in the form of images for a maximum of one second.
- If the inf is auditory it stores in **echoic memory** in the form of sound patterns for two seconds.

2. Short Term Memory (STM)

- ④ It holds the contents of our attention.
- ④ Consists of the by-products or end results of perceptual analysis.
- ④ it is also called **working/immediate/active/primary** memory.
- ④ **type** of info in STM are visual images, words sentences & so on received from SM.
- ④ **duration** of info in STM is short, about 20 to 30 seconds.

® We can overcome the limitation of the infn duration by using **rehearsals(1)**.

- There are two types of rehearsals. These are:

↯ **Maintenance Rehearsal** – involves repeating the infn in the mind.

↯ **Elaborative Rehearsal** – involves associated with the infn to d/f things & persons that already knows.

This kind of rehearsal is not only retains infn in the STM but also helps to move infn from STM to LTM.

Through **chunking(2)**; a piece of grouping small pieces of info into meaningful larger units.

The chunk may be a word, a phrase, a sentences even visual images, and it depends on previous experiences.

E.g. From 12 digit no 3,4,5,8,1,2,6,9,6,7,1,5 it is easier to put them in to three chunks like
3458,1269,6715.

3. Long Term Memory

- It is a relatively permanent storage of meaningful inf.
- It holds inf that is well learned.
- **Type** of inf is facts, events, knowledge, skills, either visual images or verbal units or both.
- **Capacity** of LTM also has no practical limits.
- **Duration** of the inf in this memory has no limited time. Or it stores inf for indefinite periods.
- The access of inf from STM is immediate but the access of inf from LTM requires time and effort.

- LTM has two categories. These are:

A, Declarative/Explicit/ Memory - contains the conscious collections of info such as facts or events that can be verbally communicated. It is divided in to two:

1, Semantic Memory - stores factual knowledge like rules, concepts, words, propositions, & images.

2, Episodic Memory- memories of events & situations from personal experience/life experience/.

B, Non-declarative/Implicit/Memory: - are memories that cannot be brought in to conscious & declared, rather they are shown in actions.

- **Procedural memory**- This memory is a memory of “how to do things”

Serial position effect

⇒ “It states that if you are shown a list of items and then asked immediately to recall them, your retention of any particular item will depend on its position on the list.”

Primacy effect- best recall of items at the beginning of the list

Recency effect- best recall of items at the end of the list.

When retention of all the items is plotted, the result will be a ***U-shaped*** curve.

- The first few items on a list are remembered well b/s STM was relatively “empty” when they are entered, so these items did not have to compete with others to make it in to LTM. They were thoroughly processed, so they remain memorable.**
- The last items remembered easily b/s they are still sitting in STM.**
- The items in the middle of the list are not so well retained because by the time they get into STM, it is already crowded. As a result many of this items drop out of STM before they can be stored in STM.**

Forgetting

- It is the apparent loss of info already stored & encoded in the LTM.
- There are **five** theories of forgetting.

1. Decay Theory

- It states that memory traces fades with time if they are not accessed now & then.
- Or the trace simply fades away b/s of disuse & the passage of time.

2. Interference Theory

- Forgetting occurs b/s similar items of info interfere on another in either storage or retrieval.
- There are **two** forms of interference

- **Proactive /Forward/ Interference** -the infn learned earlier interferes with recall of newer infn/materials/.
- Example:- If you call your new girlfriend your old girlfriend's name.
- **Retroactive/Backward/Interference** -the new infn interferes with the ability to remember old infn.



Example:- When you finally remember this years locker combination, you forget last years.

3. New Memory for Old/Displacement/Theory

- It states that the new inf_n entering in the memory can wipe out old inf_n , just as recording on an audio or videotape will obliterate/wipe out the original material.
- As you continue to store more and more inf_n at the same time you lose other inf_n , which was stored before.

4. Motivated Forgetting Theory

- ⊢ People forget b/s they block from consciousness those memories that are too threatening or painful to live with
- ⊢ People forget b/s they are motivated to forget/*we forget, we forget that we forget/*.

5. Cue Dependent Forgetting

- When we lack retrieval cues, we may feel as if we have lost the *call number* for an entry in the mind's library.
- To remember, we rely on *retrieval cues*-items of info that can help us find the specific info we are looking for.

Improving Memory

- Developing good studying habits w/h is scheduled in the comfortable place.
- Ø Paying attention:
- Ø Encode the info in more than one way:
 - Ø Add meaning:
- Ø Take your time & Over learn:
- Ø Monitor your learning:
- Expanding by using illustrations or examples:
- Ø Use rehearsals and form Acronyms:
- Ø Use the method of loci: