MEMORY

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MEMORY

- **Cognition**: is the processing of the information coming from the environment through our senses.
- **Information**: refers simply to sensory input from the environment

MEMORY

- **Memory**: is complex cognitive or mental process that involves encoding, storage and retrieval of the information.

I. **Encoding**: is process of receiving input and transforming it into a form or code, which can be stored.

II. **Storage:** is process of actually putting coded information into memory.

III. **Retrieval**: is process of gaining access to stored, coded information when it is needed.

MEMORY

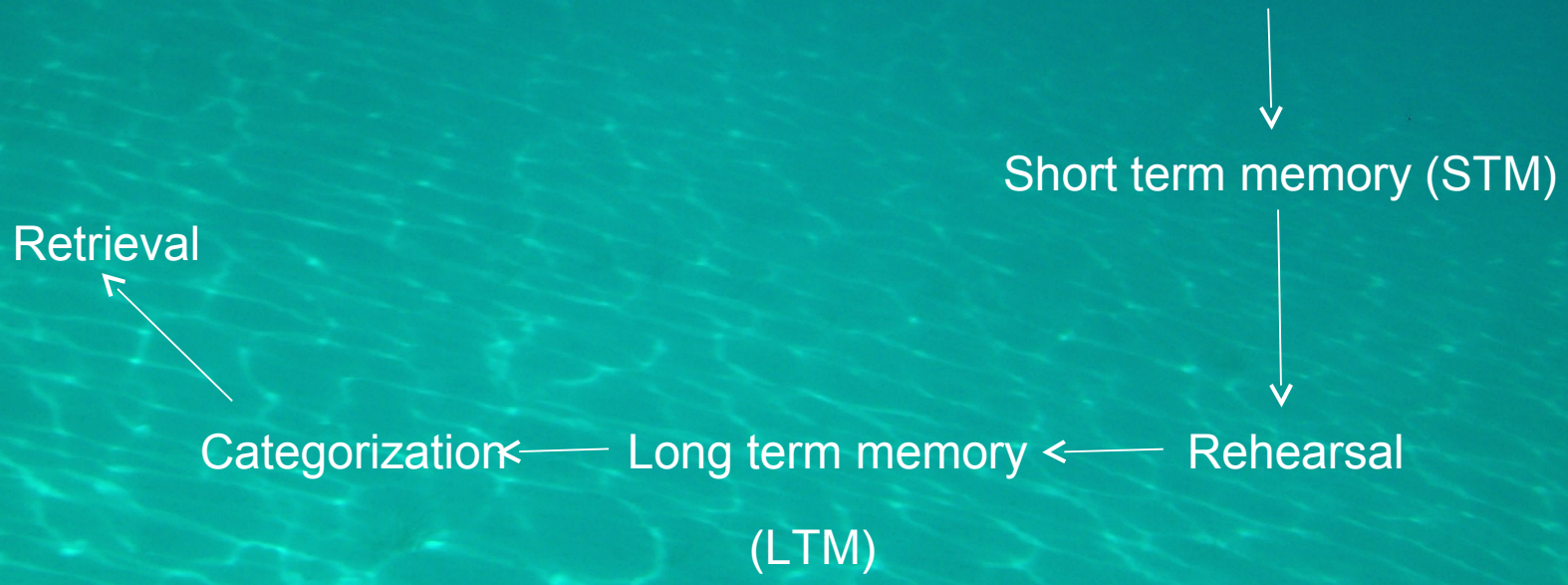
- **Theories of memory formation:**

1.Information-Processing theory

1.Level of processing theory

Information-Processing Theory

- Like digital computer
- Developed by Richard Atkinson and Richard Shiffrin (1968)
- Environment → sensory input → Sensory register → Short term memory (STM) → Rehearsal → Long term memory (LTM) → Categorization → Retrieval



- Example: Remembering telephone number

Sensory Register

- Storage function sensory channels (visual, auditory, olfactory, tactile, gustatory) is called sensory register.
- Information is held for very brief period
- Most of it is usually lost
- Information which was attended and recognized, passed to STM
- Visual sensory register holds information for 1 second in the form of ICONIC IMAGE which is a copy of visual input stored as faint image
- Auditory sensory register holds information for 4 to 5 seconds.

Short Term Memory

- The memory which holds information received from the sensory register for upto 30 seconds, length of time depends on number of factors.
- Experiment: technique used in this experiment is called 'FREE RECALL'. The subjects were shown 15 nouns. Each presented for 1 sec. and 2 seconds interval in between, subjects were asked to recall the nouns in any order that came to mind
- Zero delay condition:

1. Serial position effect
2. Primacy effect
3. Recency effect

- 10 or 30 seconds delay: If delay interval is filled with mental activity, decrease or elimination of recency effect but not primacy effect was found

Short Term Memory

- Cause: last item in the list is still in STM
- STM: Transient quality

  Limited storage capacity-7 items, plus or minus 2
- Storage capacity can be increased by process called CHUNKING- dividing total information into chunks and then remembering them
- Example: remembering telephone numbers
- **Fate of information in STM:** information is mostly lost by newer information which displaces the old one.
- Some of the information in the STM is neither lost nor retrieved but passed along the next memory stage (long term memory) through REHEARSAL.

Rehearsal

- Process of rehearsal consists of keeping items of information in the centre of attention, perhaps by repeating items silently or aloud.
- More the item is rehearsed ⟶ more likely it is to be transformed into long term memory.
- Depends upon: Amount of rehearsal

  Ways of rehearsal

Rehearsal

- **Maintenance rehearsal**
  - Passive process of repetition
  - Going over and over again, what is to be remembered
- **Elaborative rehearsal**
  - During rehearsal material is given organization and meaning so that it can be fitted into existing organized long term memories

Long Term Memory

- The memory which holds information received from STM for long period of time. (precise time not known)
- May be days, months, years or life time
- Storage capacity-no limit
- **FORGETTING OF LTM**: information is there, we have difficulty in retrieving it because
- It is not stored in an organized fashion or we are not searching it in right path of memory storehouse
- Of confusion & interference produced by new things which have been learned and put into LTM

Long Term Memory

- LTM: contains words, sentences, ideas, concepts and the life experiences, we have had
- **SEMANTIC MEMORY**: contains meanings of words & concepts and the rule of using them into the language, it is a vast network of meaningfully organized items of information
- **EPISODIC MEMORY**: containing memories of things that have happened to a person in the past.

Level of Processing Theory

- According to this theory, incoming information can be worked on at different levels of analysis, the deeper the analysis goes, the better the memory.
- **Perception**: gives us immediate awareness of the environment
- **Structure**: features of input (what it looks like, or sounds like) are analyzed
- **Meaning**: meaning of the input is analyzed
- Analysis to the deep level of meaning gives the best memory
- Routine happenings of daily life are not processed deeply

Level of Processing Theory

- Rehearsal plays a role in the deeper processing of the information.
- Maintenance rehearsal is not enough for good memory
- Elaborative rehearsal processes information to the meaning level, so that memory is well retained
- Greater elaboration ⟶ greater possibility that memory is remembered