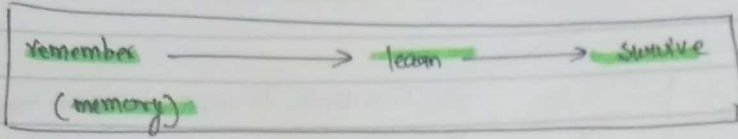


6. Memory

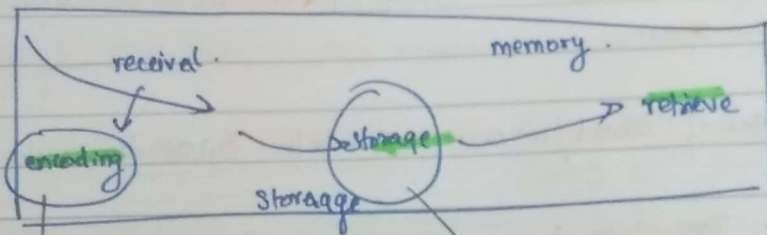
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Larry suffered from dementia - memory issues



Memory (Active system)

- receives info from senses → organizes & alters it as it stores it away, and then retrieves the info from storage



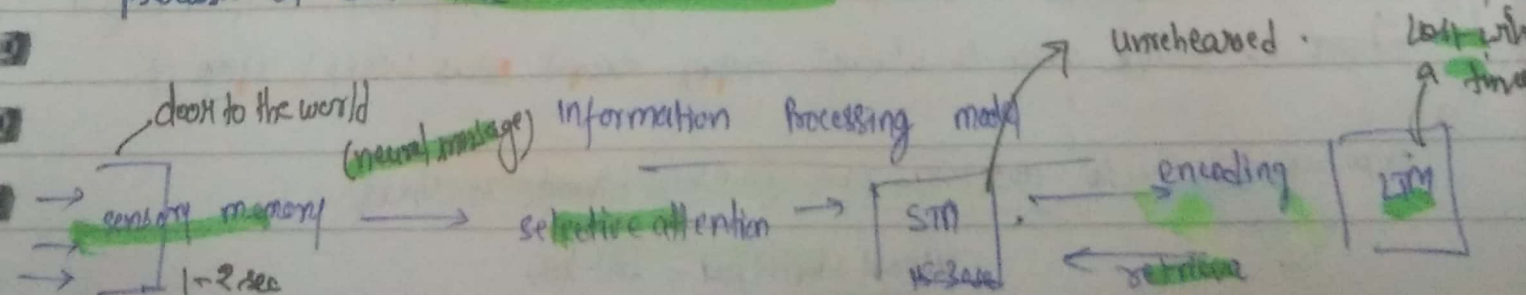
place? process?

Sound converted by auditory nerves - different time framework (20 sec - 1 yr)

models of memory

most comprehensive model - Information processing model.

- Information processing model: How in each of the 3 stage
- Levels of processing: - depth (meaning of word), shallow level of processing
- PIP (Parallel Distributed Processing): - not serial but parallelly brain several different processes at same time. retrieval & action is much faster.

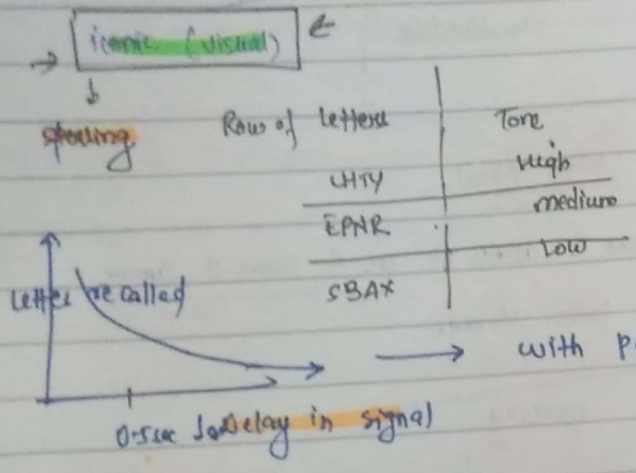


Sensory memory: explains the double take in life (even 1 sec)

- did I just see her?

echoic (hearing)

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Participant to recall based on tone.
 Participants could recall also everything

with passage of time recall decreased.

Masking → quarter of second / 0.5 sec — New info substitutes marks old one.

Eidetic imagery → rare, some people → access a visual memory — long period of time.

Iconic memory: eye saccadic movements of attack → continuous & stable image of surrounding. enough time for brain to decide info impo for consciousness

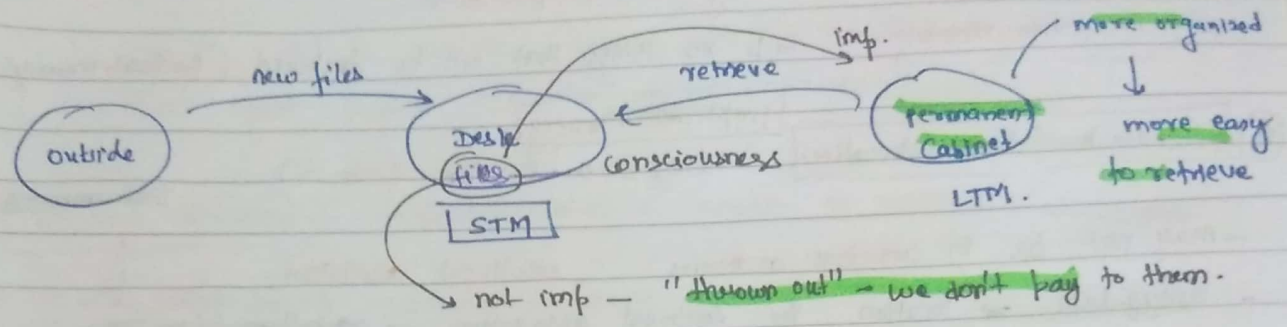
Echoic memory → what! 1/4 sec → "instant replay" in brain.
 lasts longer but capacity limited.

Short term memory — one stimulus out of many incoming focused.

Cochlear party effect → perception & memory → some area is always working except deep (deep) stage IV.

encoding mostly in auditory form ("talk" inside our head)
 visual sketchpad — but less.

other defin: - Active working memory → central executive
 (for both auditory & visual info) (name: Ellis, R, SM, RET)
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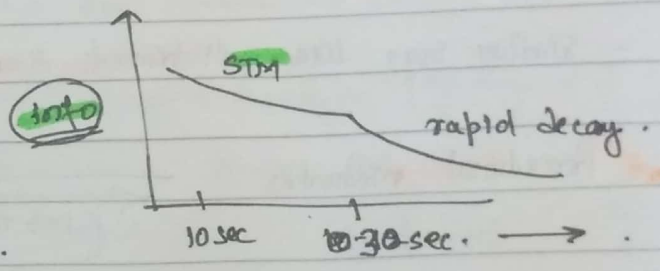


Miller digit span test STM - 7 ± 2 (magical number) (only 7 files)
 chunking: fool STM - 3-3 sequence chunks encoded (10-12)

How to increase time from 30 sec

Maintenance Rehearsal - paying attention

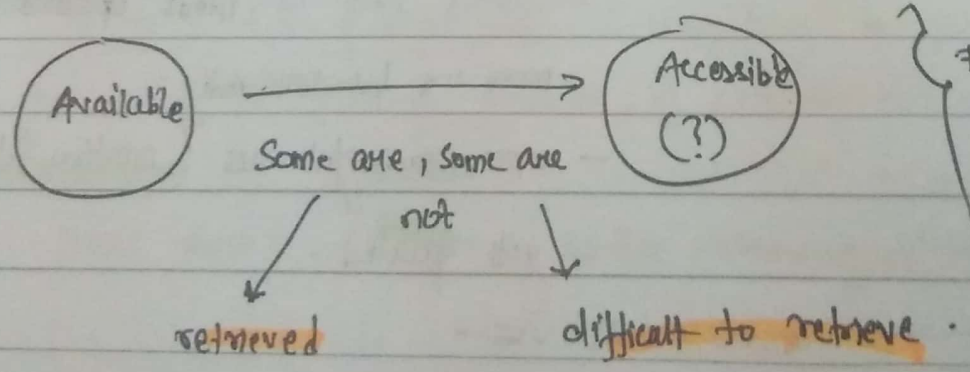
if someone interferes, it can create issue.
 example: counting.



helpful Global

✓ Pushing out info from STM for more permanence → 'adjective' - associated

Long Term memory - unlimited (always room for more info)



Role learning/maintenance
Rehearsal
 not effective way of encoding in LTM

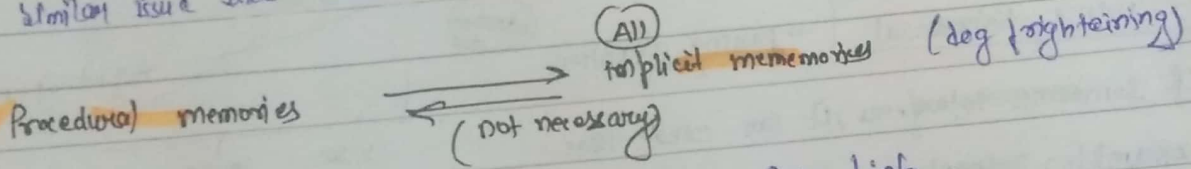
files in LTM organised by elaborative rehearsal. (with meaning)
 (deep processing than just physical characteristics)

Types of LTM

- Skills (Non-declarative) memory → steps / procedures.
- Declarative memory - facts are things that can be declared (factual memory)

Procedural (Non-Declarative) implicit memory
 Tying shoes - example. (-can do) Skill memories.

- may not be in conscious awareness. emotional association.
- amygdala → location for emotional association - cerebellum (hind brain)
- damage to Hippocampus area of brain - Anterograde Amnesia (new LTM can't be formed) - Tower of Hanoi problem - not remember but solve
- similar issue like Alzheimers disease (procedural memory not lost)



Declarative / factual / explicit LTM

- can know, facts/info.

semantic (GK memory)

formal education (KBC tests)
 (people lose it)

episodic memory

- personal knowledge / autobiographical memory

- episodes from life, needs updated & revised
- more or less constantly.
- more meaningful ones (emotional) → RTQ & EATL
- gets updated.

explicit

filing cabinet → conscious mind

implicit: can't be brought (very difficult)

LTM organization

(sensory network model)

network / links (nodes) → (focal point) → in hierarchy

✓ info is stored in connected fashion, with concepts that are related to each other stored physically closer to each other: (kind of internet)

Retrieval of LTM

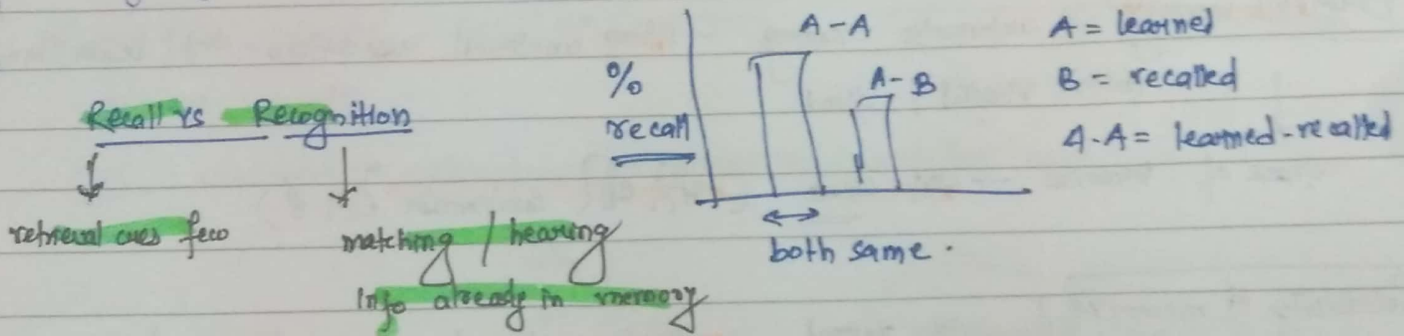
- retrieval cues (a stimulus for remembers) → sound / phrase

ex: TV with eating peanuts → next time peanuts → remember TV serial

✓ Encoding specificity: connection between surrounding & remembered information.

⊗ learning + Environment → same retrieval → easier ⊗

✓ State dependent learning: - memories formed during a particular physiological or psychological state will be easier to recall in a similar state -



⊗ Retrieval failure: (Tip of tongue miss) : may know but just below surface. can't be pulled to auditory recorder of STM to be fully retrieved.

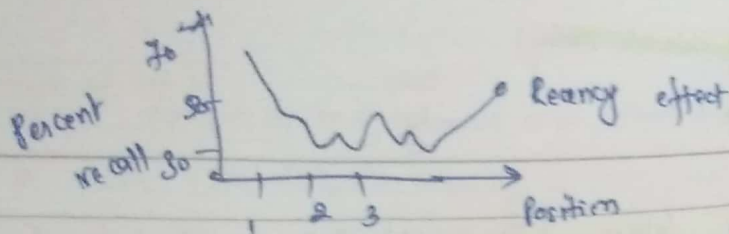
solution: forget about it → later in similar surrounding - "pop out" → but now left

⊗ serial position effect: - "prejudice" info beginning / end → recency effect

↓ primacy effect (no interference in S)

⊗ just heard → recency STM (no push out) → goes properly LTM

demo: job interview - recall it low chance



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Recognition: cues are present - multiple choice / true false - answer match from memory.

↓ people recognize face (85-95%) but recalling name is difficult.

false +ve: (something recognized but not in memory) - eyewitness

Compromise of memory (Leftus) = 8 demonstrators - left - every one saw

Q. Quest

(4)

(12) number

fact.

1 month how many

(6-4)

people compromise with new info.

Flashbulb memory = automatic encoding - strong emotional association - top / death / birth

Aabri masjid / flood

release of hormones - limbic create

(after after compromise of memory)

Reliability of memory! → revised — edited — altered on a continuous basis.

constructive processing of memories:- inaccuracies creep in the memory

making a story rather than reading a printed one.

Bartlett: { memory = blend of knowledge + inference }

alteration based on newer information.

"knew it all along"

ex: discard any incorrect info & add new info joined afterwards

{ almost slight bias }

Memory retrieval problems

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① Misinformation effect :- misleading info after the event to better the accurate memories. particularly hypnosis.

② False memory syndrome :- inaccurate memory creation by suggestion of others

- Sometimes accidentally also created.

- can't be just created for any kind of memory.

possible events to create ET AAB A B (7 class - swati)

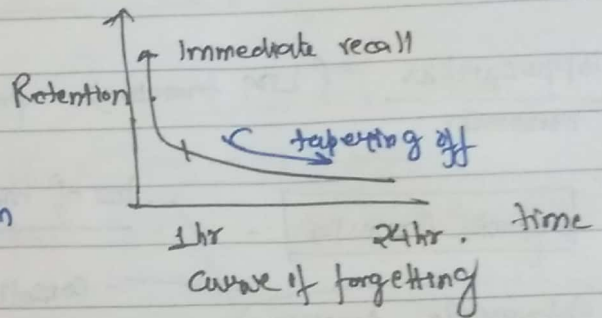
could convince them to believe the event could have happened to them.

Forgetting

- if not forget, very difficult to live life

ex:- Sherlock Holmes

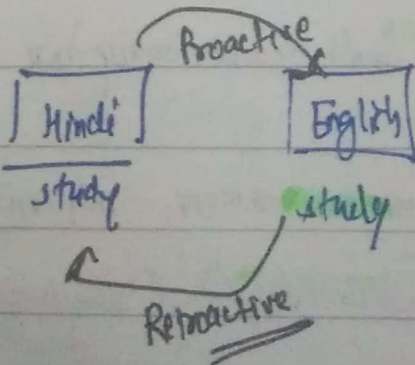
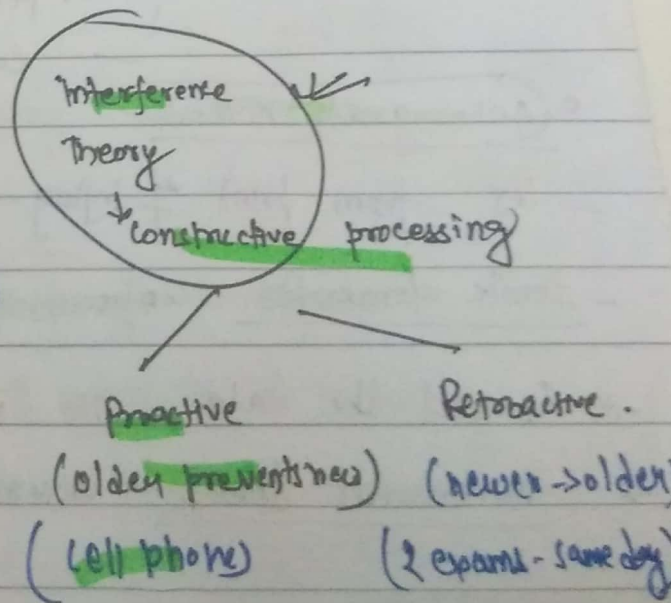
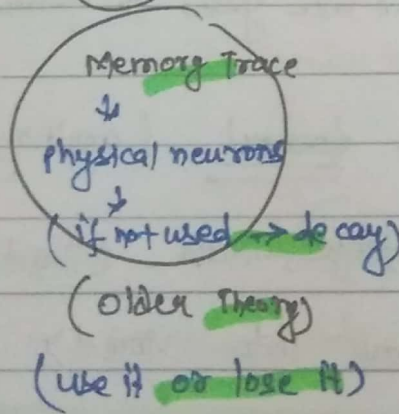
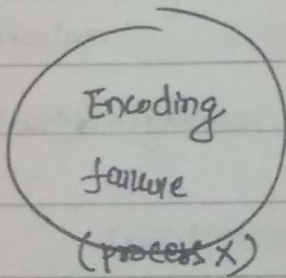
Ebbinghaus & the forgetting curve :-



* non-sense syllables - WOL / EXT and then did on himself

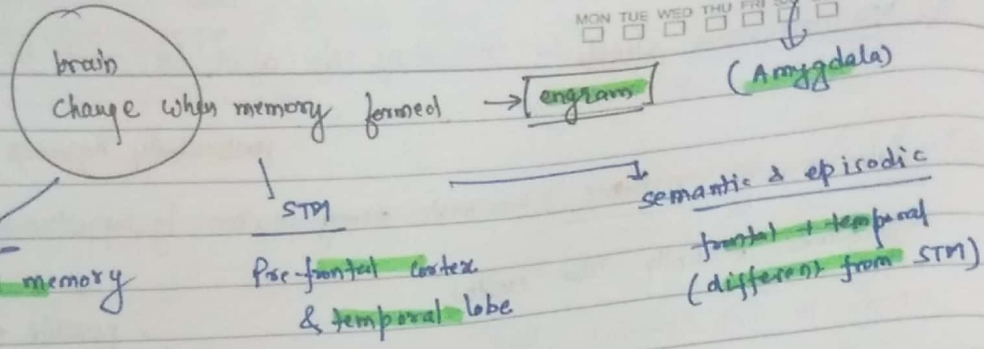
* meaningful material - slow forgetting - similar curve

Why

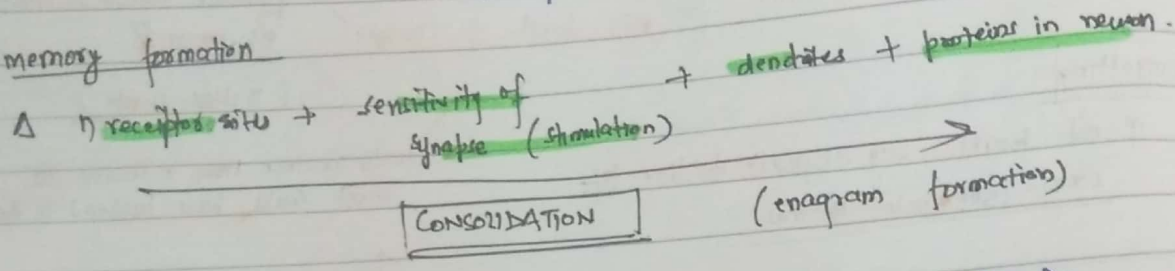


Physical Aspects of Memory

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memory formation



Hippocampus (LTM formation) - procedural ✓ semantic + episodic ✗
 removal:

- Organic Amnesia :- loss of memory (point of injury - trauma backward)
- Retrograde Amnesia :- consolidation not completed - hence lost memory.
- 10th min of work saving - computer.
- permanent ones stay sometime.
- can take years to form again (ECT treatment (electroconvulsive treatment))

Anterograde Amnesia

- loss from point of injury - forward (anything new memory - difficult)

- senile dementia : confusion, forgetfulness. (Hard drive defective)

→ < read the data, no new info stored >

→ Alzheimer's disease: several doses - because they don't remember today date.

Infantile Amnesia : Memory lost < 3yrs (can camera genuine memory - not manufactured)

memories formed @ time → implicit not explicit (communication) (language)

hippocampus developed ✗ → Alzheimer disease