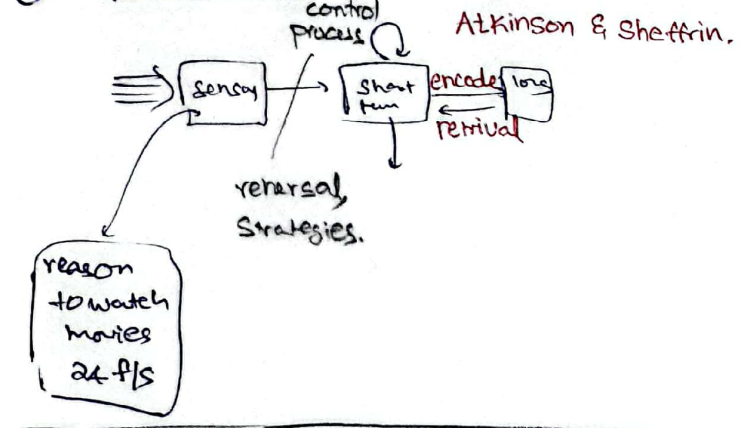


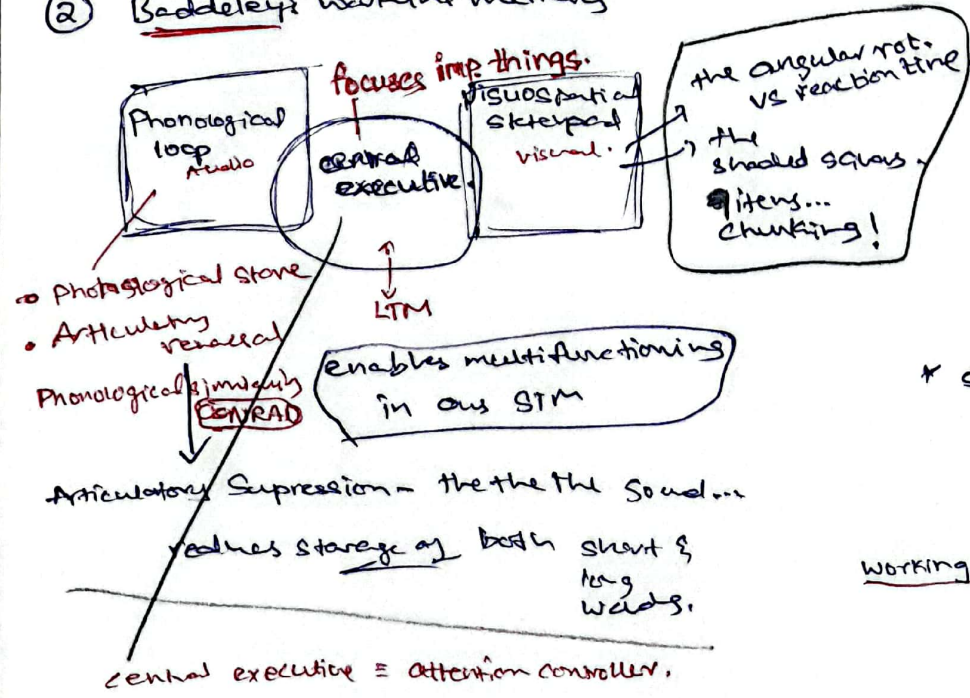
capacity & duration

- John Brown
Lloyd Peterson
Margaret Peterson
- 3 letters & number could backwards.
 - proactive interference occurred...
 - retroactive interference is a thing
 - without rehearsal; STM is 15-20s
- Zhang & Luck... wtf!

① Modal model of memory



② Baddeley's working memory



capacity is:

- digit span 7 ± 2
- change detection 4 square

more items by

chunking - Miller in 7 ± 2 paper.

* see amount of informatⁿ even number shaded cubes...

Alvarez & Cavanagh 2004.

Working-memory: introduced. understands & processes.
Baddeley & Hitch

* Vogel: some have better central executive to focus.

Working memory: Prefrontal Cortex

for monkeys; PF removed... can't have STM.

LTM:

(2)

Coding:-

Visual coding

Acoustic

Semantic

Phonological

Similarity

Effect

CONRAD

Semantic coding in STM:-

Wickens experiment.

(fruit) (fruit) (fruit)

(fruit) (fruit) (job)

Semantic in LTM:-

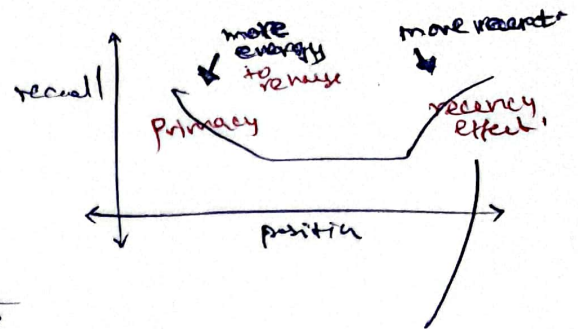
Coding

Sachs experiment

passage on galileo

then asks exact wording...

Serial position curve



due to STM.

> Glanzer & Cunitz proved it

By 30s counting backward

then



Localizing memory in brain:-

STM LTM together or separate.

evidence for both.

Neuropsychology:-

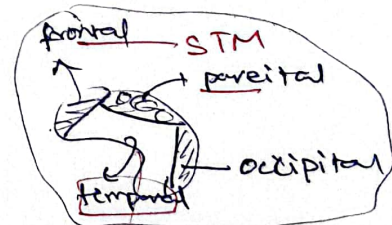
patient HM:-

(in temporal lobe)
remove hippocampus (Prefrontal for short term memory)
new LTM's gone

patient Clive Wearing:-

musician

had viral encephalitis
- damaged temporal lobe.
new LTM's gone.
Always feel like waking up.



hippocampus

LTM.

patient KF:-

damage to parietal lobe

- Good long term memory.

Poor STM. low digit span.

Proof for combined LTM, STM:-

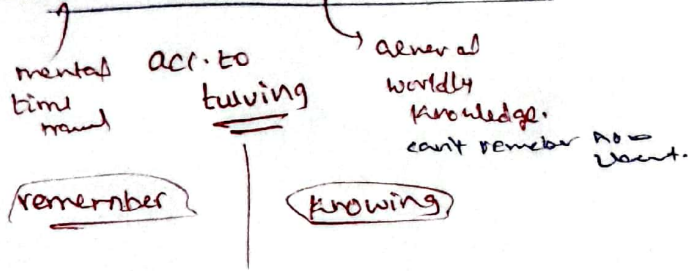
"The hippocampus, crucial for LTM may play crucial role in STM".

- charan rangaswamy
& mark Desposito.

* Hippocampus process in

Novel information - new face....
for short durations.

episodic vs semantic memory.



→ Proof for different mechanisms:

Patient KC: damage to hippocampus.

KF had perirhinal lobe damage, losing STM

can't relive memories.

episodic X brother's death sadies X
semantic ✓ where uterus is ✓



Hippocampus

LTM → Episodic

Patient Italian woman:

encephalitis! Same as musician's brain

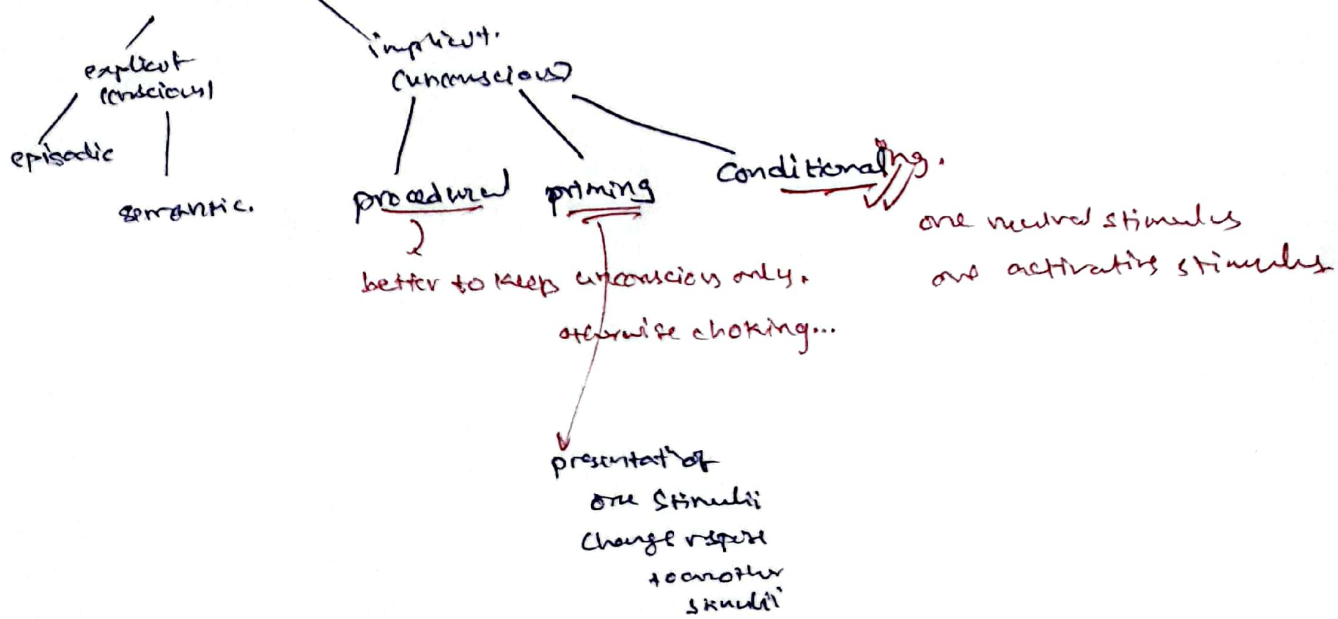
semantic X forget shopping lists
episodic ✓ could relive memories.

→ proof for interaction:

→ knowledge affects experience. (same rules).

→ autobiographical memories → episodic → favorite type
+ semantic → shape location.

long term memory



magazine ads give implicit good branding, since ppl don't remember explicit ads.

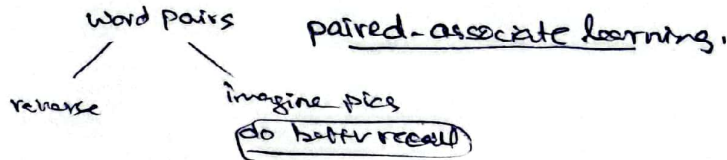
LTM: encoding retrieval, consolidation:-

levels of processing theory

Encoding: 1) rehearsing:-
maintenance rehearsal → shallow processing
elaborative rehearsal → deep processing

Craik & Lockhart.

2) forming visual images:-



3) link words to yourself - self-reference effect

4) Generation - effect

King - crown King - cr
more recall.

Norman Slaterka
&
Peter Graf

5) organizing info:-

* retrieval cue. people spontaneously organize info.

* Gordon Bower gave participants info in tree organized manner -

* balloon pic - passage method...

without pic; don't comprehend passage.

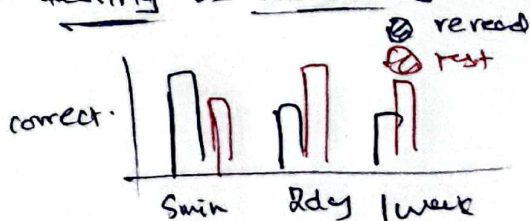
6) relate to survival value.

relating examples to survival gave best recall rate

1) Retrieval Practises

* testing ^{better.} VS re-reading.

* Imp. for personal life ra akash!



testing effect

practice for retrieval means!

2) retrieval cues - place where originally thought.
Childhood home.

Law of
A) State dependent learning:-

internal mood (or) awareness.

Same while encoding & retrieving.

emotional context

3) matching conditions of encoding and retrieval:

principle of encoding specificity:-

encode with context.

underwater study & test.

memories

LTM consolidation: Fragile state to more permanent state.

Synaptic consolidation:

- experience causes changes in synapse structures.
- fire more easily.
- Additions.....
- new proteins structural changes.

Long-term potentiation
LTP
more firing of neurons.

consolidation & sleep:

- > sleep within 3 hours; good results. | enhanced consolidation.
- > consolidation not affected by environmental stimuli
- * expectations affect consolidation.... students who knew exam was there; were high scorers.

Reconsolidation:

- > retrieving memories make them fragile again.
- > has to be reconsolidated.

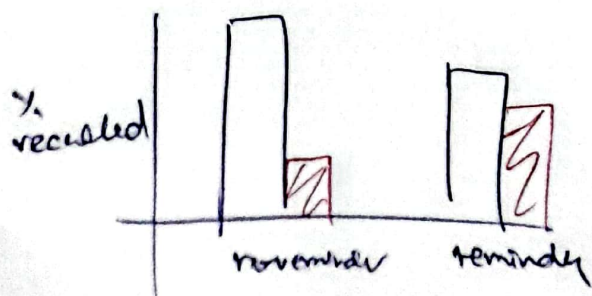
Rat experiment:

anisomycin

antibiotic that inhibits protein synthesis & prevents any consolidation happening.

Nader's experiment

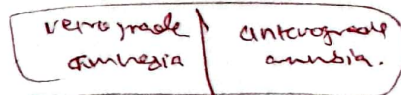
Hupbach reconsolidation: ☒ List 1 ☒ List 2



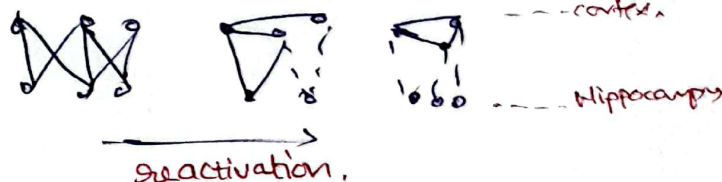
Systems consolidation: hippocampus + cortex.

1) Standard model of consolidation:

incoming info activate many areas of cortex.



reactivation
→ mechanism of consolidation



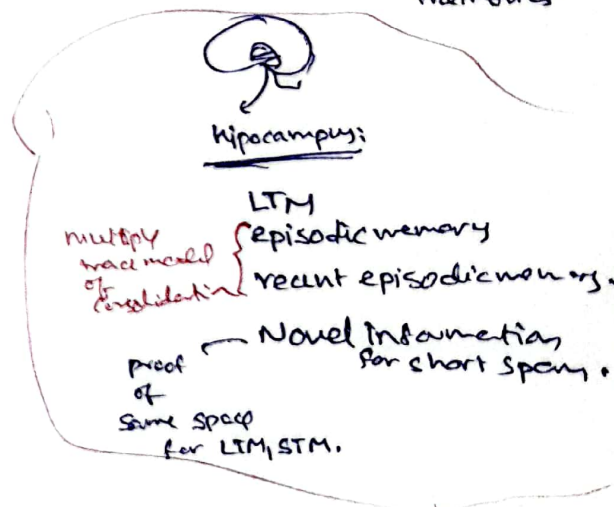
2) Multiple trace model of consolidation:

hippocampus involved in retrieval of episodic memories

Model & Moscovitch

Patient K.H.

Both recent and older episodic memories



PTSD-treatment via reconsolidation

administer

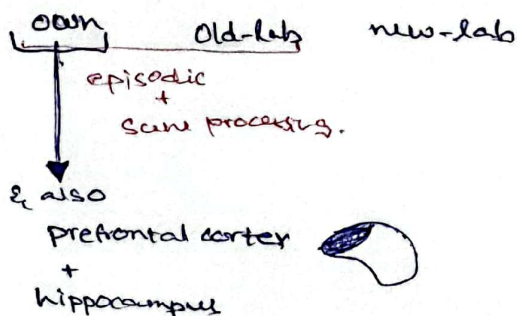
propranolol to block stress hormone receptors in amygdala.

imp for emotions in memory

Memory errors:-

Autobiographical memory
 + episodic + semantic.
 + multidimensional.
 + Some we remember better.

Photo of a place:-



fMRI - brain activity

episodic memory → medial temporal lobe

Scene processing → parietal cortex.

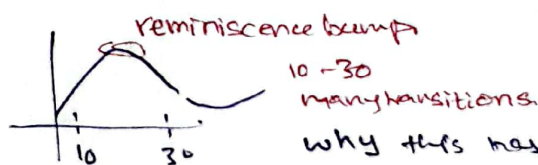


* Autobiographical memories can elicit emotions, activating amygdala.

emotion processor.

which memories are stronger

- highly emotional
- transition points



why this has more strength

Emotions & memory:-

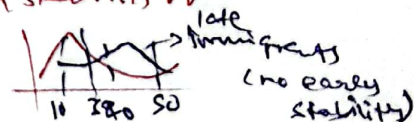
Amygdala - emotions.

patient BP: damage to amygdala.
 Story abt boy & mother.
 - normal ppt showed enhanced memory.
 - BP was normal.

1) Self-image hypothesis ✓

2) Cognitive hypothesis

period of rapid change followed by stability ✓



3) cultural life script hypothesis

culture taught events

* Stress hormone released for an exp improves consolidation.

Cortisol → enhances memory for emotional images.
 stress hormone (related stress hormone).
 cold water - hand dip.

Weapons focus - decreases memory for other details.

Emotions can impair memory

Flashbulb memories = memory for circumstances surrounding highly charged events.
 Not for the event itself.

proposed by Brown & Kulik - thought there was special mech. for flashbulb memories.
 like photographs! PTO.

Flashbulbs

memory about circumstances surrounding emotionally charged events.

Brown & Kulik proposed "how-print" mechanism, since participants remember details so vividly.

planned experiment;

since can't measure accuracy

repeated recall technique:

compare now to previous memory

* Space Shuttle Challenger.

teacher Christa McAuliffe

Ulric Neisser
Nicole Harsch

"Flashbulbs not photograph!"

- rehearsal - narrative rehearsal
- media coverage. hypo.

Again with 9/11 attacks?

accuracy was same as everyday memory

but "belief that correct" is stronger.

flashbulb memories:

Not more accurate factually
but believed to be correct. than everyday memory.

Experiment:

photos with colored frames, confidence rating...

"emotions enhance memory to remember the event; but not details of the event."

* Constructive nature of memory:

not only omit details; change some too.

→ Source monitoring errors: — gender stereotypes... Marshall & Cow

• "Become famous overnight" test.

- teach old non-famous names.

- give again new non-famous names & famous names.

- picked old non-famous as new famous.

source — TV or recent yesterday

even

source monitoring error.

experiment

- statements with
persons name,
- & asked gender...

- stereotype affected

Source monitoring

if
familiar name
given to
masculine gender,
error more,

1) Real-world knowledge affects memory

Stayed up.

cried → pragmatic inference.

wording changes in statements

Baby — all night

pragmatic inference. expects something not explicitly mentioned.

2) Schemas / Scripts:-

Knowledge abt some environment.

3) False recall/recognition:-

bed - rest pillow.

Subject say "sleep" - constructive process → error in memory.

4) memory created by suggestion:-

misinformation effect - info after event changes persons memory.

MPI.

5) Creating false memories of early life events:-

criminal therapist.

misleading persistent information

6) errors in eyewitness testimony:-

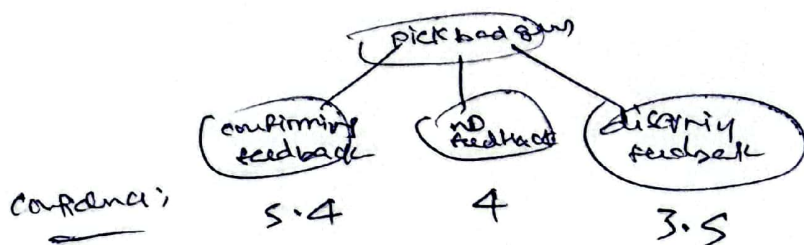
- picks a person, even though he ain't present.

- weapons focus.

- due to familiarity - Source monitoring error.

- error due to suggestion:-

"which one is it?" → implying someone is wrong does.



Wells & Bradfield - expt with feedback

& then confidence ratings by subject.

"Post identification feedback effect"

ideally, subject should have same confidence.

What is being done:-

Lineup procedures:-

- 1) Inform bad guy might not be there.
- 2) Use "fillers" who are similar to suspect.
- 3) Use sequential lineup over simultaneous lineup.
- 4) Use "blind admin" to reduce post identification feedback effect.

Interviews:-

Cognitive interviews

1. minimal intervention.
2. recreate the scene.
3. Take long.

Depression:-

symptoms... all bad ones

→ causes:-

- 1) childhood trauma.
- 2) Major life events
- 3) Hormonal changes

Causes:

- imbalance in neurotransmitters
 - Stress damages brain cell.
growth → neurogenesis.
 - Also genes... lol.
- Serotonin
not dopamine.

(Stroop) effect:-

Coloured shapes & then words.
irrelevant stimuli is ish

Attention & memory bias:-

Main's expt: Bias to negative
Emotional Stroop task.

UD - major depressed
RD - remitted depressed.
ND - not depressed

Time taken, specificity & response to word shown.

Decision making:-

inductive reasoning:-

conclusion from evidence.

conclusions probably true

strength of inductive argument

- representativeness of observations
- number of observations
- quality of observations.

heuristics

1) availability heuristic.

When less occurring special events stand out in our memory, then wrong na....

illusory correlations.

↳ stereotypes

↳ fallacies

eg: all gays are effeminate.

↳ is a illusory correlation

since we CHOSE not to pay attention to non-effeminate gays.

2) representative heuristic.

* based on resemblance....

a person, calm & reads books.

probable librarian over farmer.

Amos Tversky
&
Daniel Kahneman

} question on american whether favour a liberal or conservative

subjects ignored

base rates in america.

4) Law of large numbers:-

people take small sample as representative of whole... myself

3) conjunction rule.

she is bank teller } more probable.

she is bank teller and activist.

5) Attitudes, precepting

myside bias

hold their own opinions

Utility approach:-

expected utility theory

Basic: people are rational thinkers.

But no! lol!

Expt: Bowl
11.7
↑↑↑

Bowl
11.7
with many good.

* Thierriest & Co.

Deal/ no deal

contestants choices depend not only on probability;

but how lucky they were previously

who did good → took deal

who did bad → took risks. avoid being a loser.

emotions in decision making:-

* damage to prefrontal cortex: flattened emotions have impaired decision making.

→ personal qualities:

- 1) risk avoidance
- 2) quality of optimism.



→ incorrect emotion prediction:-

Expected emotions!

Deborah: compared

people's expected emotion
with
actual emotion.

Why people overestimate emotion on negative outcome? they overlook coping mechanisms.

* Incidental emotions:-

- naturally happy.
- good BCM

Clouds make nerds look good - Uri Simonsohn.

Jennifer Lerner;

gave emotional setup & asked to establish
buying/selling
prices.

* Context of decision:-

Justice is what the judge for breakfast.

Status-quo bias:-

deciding with the default option.

opt-in vs opt-out

- insurance
- organ donation.

Framing effect:-

decisions change based on how
choices are presented.

Neuroeconomics:-

psychology
neuroscience
economics

the ultimatum
game.
10\$ division.

Alan Sanfey's
game

the
ultimatum.

if computer unfair ✓
if human X
not okay

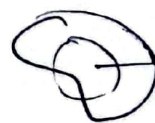
right
anterior
insula



3 times
strongly
when responders rejected an offer.

right anterior insula b/w prefrontal & temporal lobe...

3 times activated in rejection.



whole area related to negative emotions.

Prefrontal Cortex. → same activation in accept & reject.

so

insula → emotional goal of fairness

PFC → cognitive goal of money

Deductive reasoning

from premises

Aristotle.

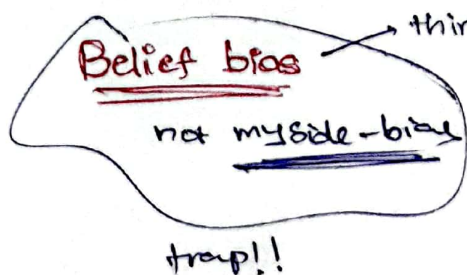
Syllogism

conditional syllogism

categorical syllogism
all/some/none

premise 1 if then
p:2
conclusion

validity of syllogism
vs
truth of statement



think syllogism is valid if conclusion is sane.

modus ponens

modus tollens

→ conditional reasoning:-

Wason four-card problem.

if vowel → then even.

falsification principle:-

* to negate a statement, we look for false instances

The mental model approach

* people have a mental model

to determine validity of
syllogism.....

look to falsify

Phillip
Johnson
Laird.