# Memory and ....I forget!

## Forgetting: When Memory Fails

a person without a normal memory faces great difficulties - just think of how troublesome it is when you forget someone's name!


Why do we forget?
3 possible reasons:
1. Encoding failure
2. Decay
3. Interference

What is amnesia?
Retrograde Amnesia - memory lost for events prior to a certain event
Anterograde Amnesia - memory lost for events following an injury - still remember things from before the injury


## Memory and Forgetting

"the process by which we encode, store and retrieve information"

Memory is an active system that receives information from the senses, organizes it, then alters it as it stores it away, and then retrieves the information from storage

The Information Processing Model model of memory that assumes the processing of information for memory storage is similar to the way a computer processes information: in a series of three stages


## Retrieval of Long-term Memories

## 3 Stages of Memory

1) SenSory Memory
2) Short Term Memory
3) Long-term Memory

## SenSory Memory

refers to the initial, momentary storage of information, lasting only an instant - very brief, but also very precise!

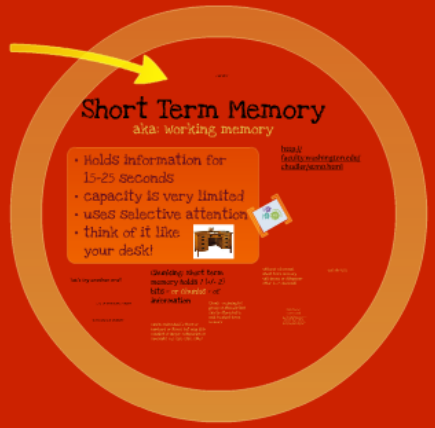
**Iconic Memory**
- Visual sensory memory, lasting only a fraction of a second (1/4 second)
- Information pushed out very quickly by new information

**Echoic Memory**
- Auditory sensory information, lasting from 2-4 seconds
- Limited to what can be heard at any one moment
- Smaller, but lasts longer

## Short Term Memory

aka: working memory

- Holds information for 15-25 seconds
- capacity is very limited
- uses selective attention
- think of it like your desk!



## Long Term Memory

No limits! There is nothing stopping you from learning and remembering as much as you want for as long as you want!

Let's Practice!

http://vsx.onstreammedia.com/vsx/pbssaf/search/PBSPlayer?assetId=68518&ccstart=100781&pt=1&vid=pbssaf1402&entire=No


WARNING:
DRINKING MAY CAUSE MEMORY LOSS.
OR WORSE, MEMORY LOSS.

# Memory and ....I forget!


# Memory and Forgetting

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## The Information Processing Model

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# he Information Processing Mode

model of memory that assumes the processing of information for memory storage is similar to the way a computer processes information: in a series of three stages

## Encoding

Refers to the process by which information is initially recorded in a form usable to memory

## Storage

The maintenance of material saved in the memory

## Retrieval


Material in memory storage is located, brought into awareness, and used

# 3 Stages of Memory

1) Sensory Memory
2) Short Term Memory
3) Long-term Memory

Sensory memory refers to the initial momentary storage of information - very brief, lasts only a second!

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Short term memory can hold information for 15 - 25 seconds....capacity is very limited

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Long term memory is relatively permanent although information can be difficult to retrieve!


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Durin

During the sensory memory stage, the memory is most similar to the actual physical stimulus it represents!

CNQMWNT

# Short Term Memory

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http://faculty.washington.edu/chudler/stm0.html

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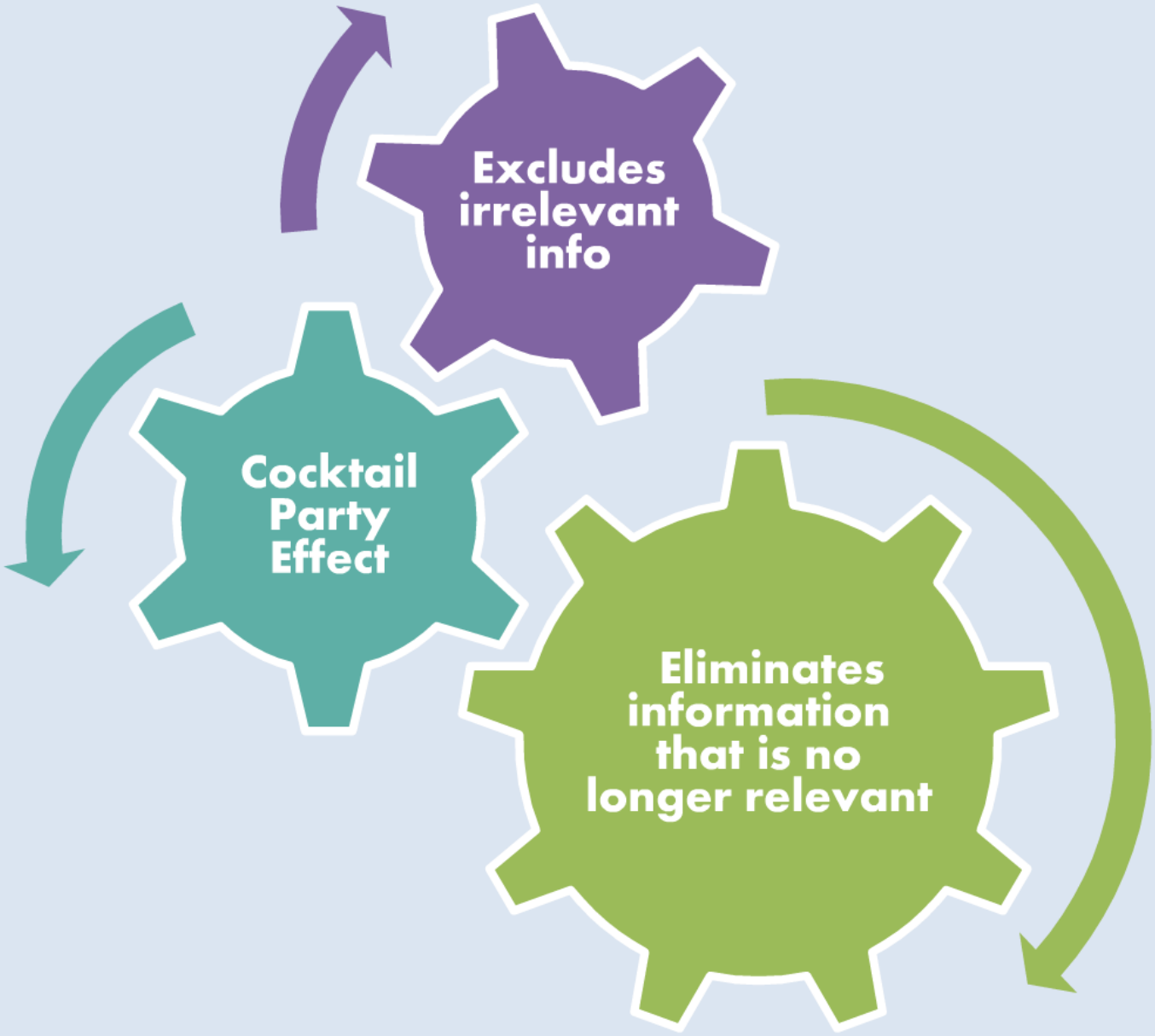
Let's try another one!

Chunking: Short term memory holds 7 (+/- 2)




# Selective Attention

# aka: working memory

- Holds information for 15-25 seconds
- capacity is very limited
- uses selective attention
- think of it like your desk!

Let's try another one!

Chunking: Short term memory holds 7 (+/- 2)

CNQMWNT

http://
faculty.washington.edu/
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Let's try another one!

CBCNAFTATVOCNBCTVRCMP

TNTASAPLOLROFLPOSWTF

# Chunking: short term memory holds 7 (+/- 2) bits - or chunks - of information

Chunk › meanin
group of stimul
can be stored a
unit in short te

Chunk › meaningful group of stimuli that can be stored as a unit in short term memory

can be individual letters or numbers or items, but may also consist of larger categories or concepts (e.g. CBC, CIBC, CNIB)

without rehearsal,
short term memory
will decay or disappear
after 15-25 seconds

905-637-3286

# Maintenanc
# e Rehearsal

repeating something over and over again so that you can use the information - stays in STM until rehearsals stop then the memory rapidly decays and is forgotten

# Long Term Memory

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Rehearsal

ferring the info from STM into LTM

Mnemonics

- Every Good Boy DeServes Fudge

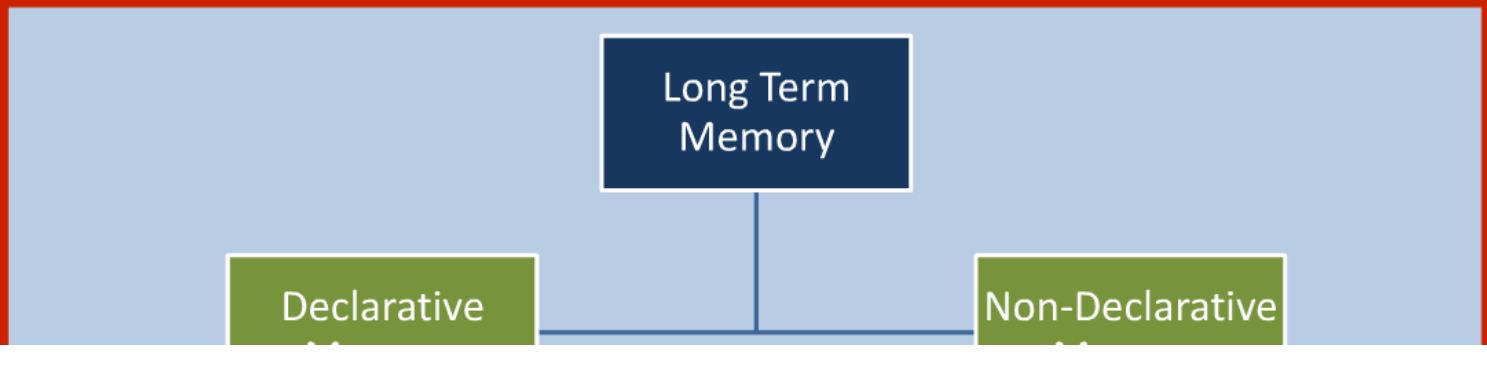
## Elaborate Rehearsal

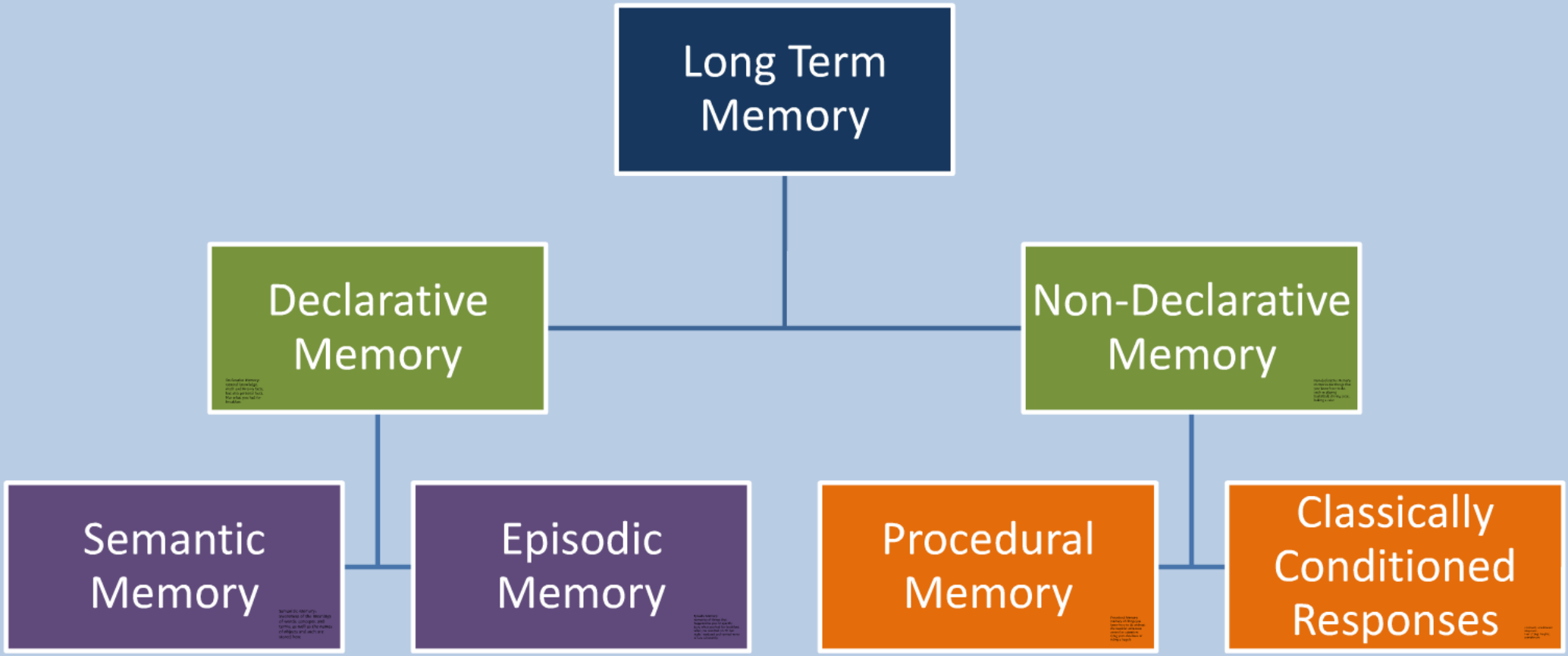
- transferring the info from STM into LTM by making the info meaningful in some way
- connect new info to something that is already well known
- info that is 'deeply processed' or processed by meaning rather than by sound or physical properties will be easier to remember!

ng as much as you
s long as you want!

Mnemonics

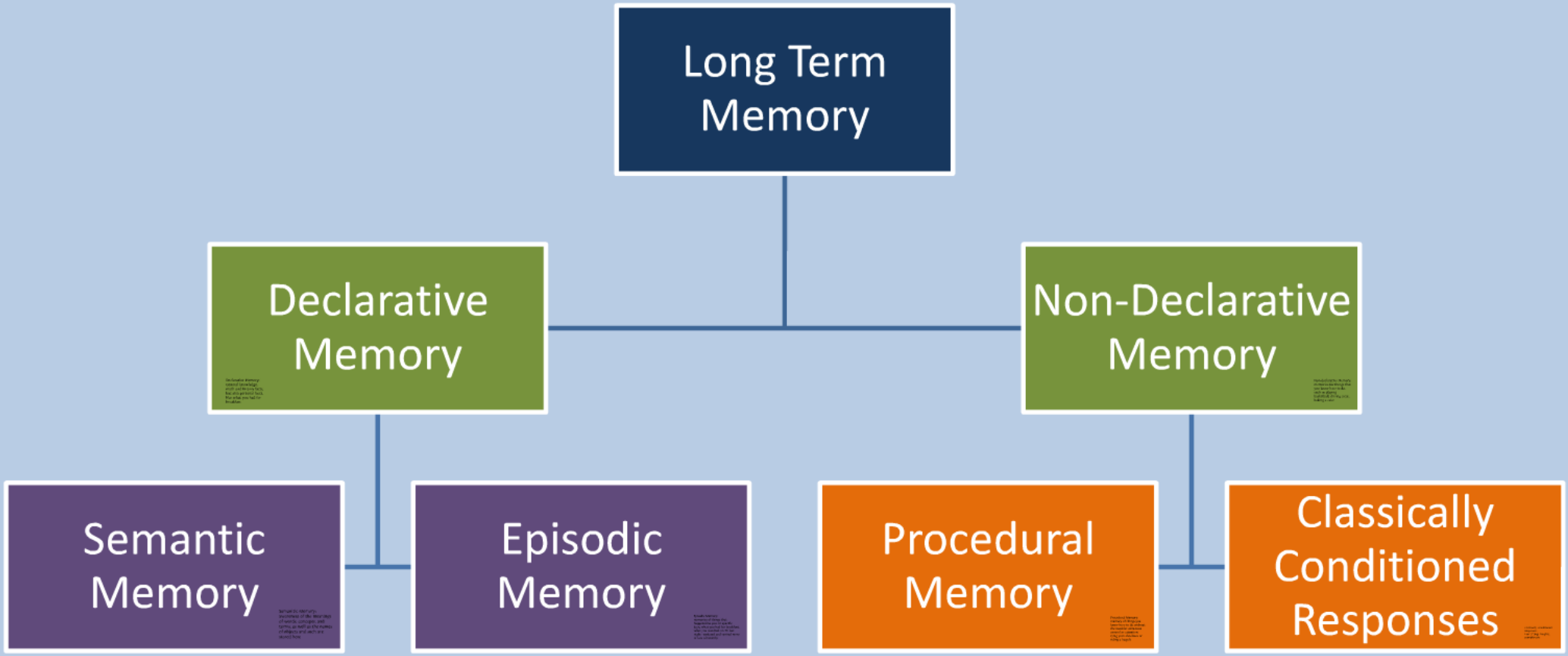
- Every Good Boy Deserves Fudge
- Kids Prefer Cheese Over Fried Green Spinach
- Never Eat Shredded Wheat






http://vsx.onstre

Declarative Memory: General knowledge, math and history facts, but also personal facts, like what you had for breakfast

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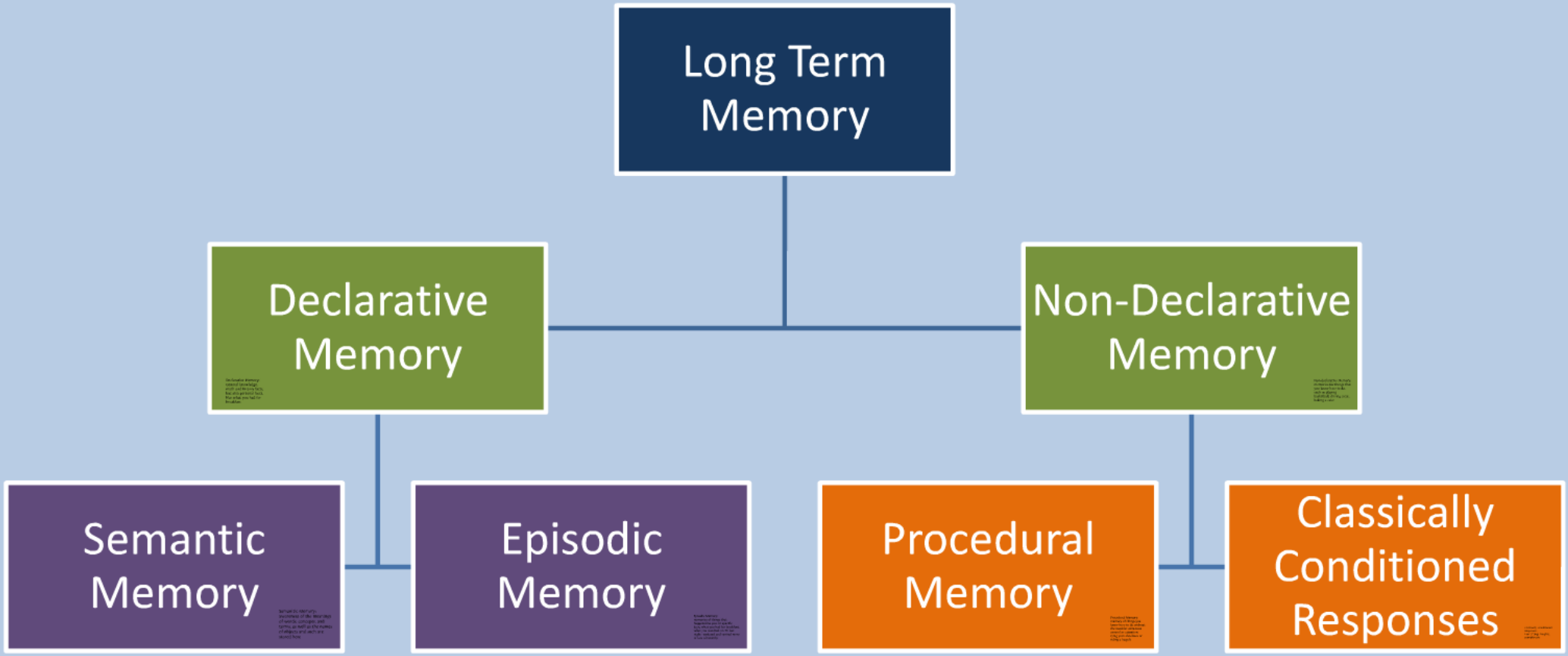
Semanitic Memory: awareness of the meanings of words, concepts, and terms, as well as the names of objects and such are stored here

Episodic Memory:
memories of things that happened to you on specific days, what you had for breakfast, what you watched on TV last night - updated and revised more or less constantly

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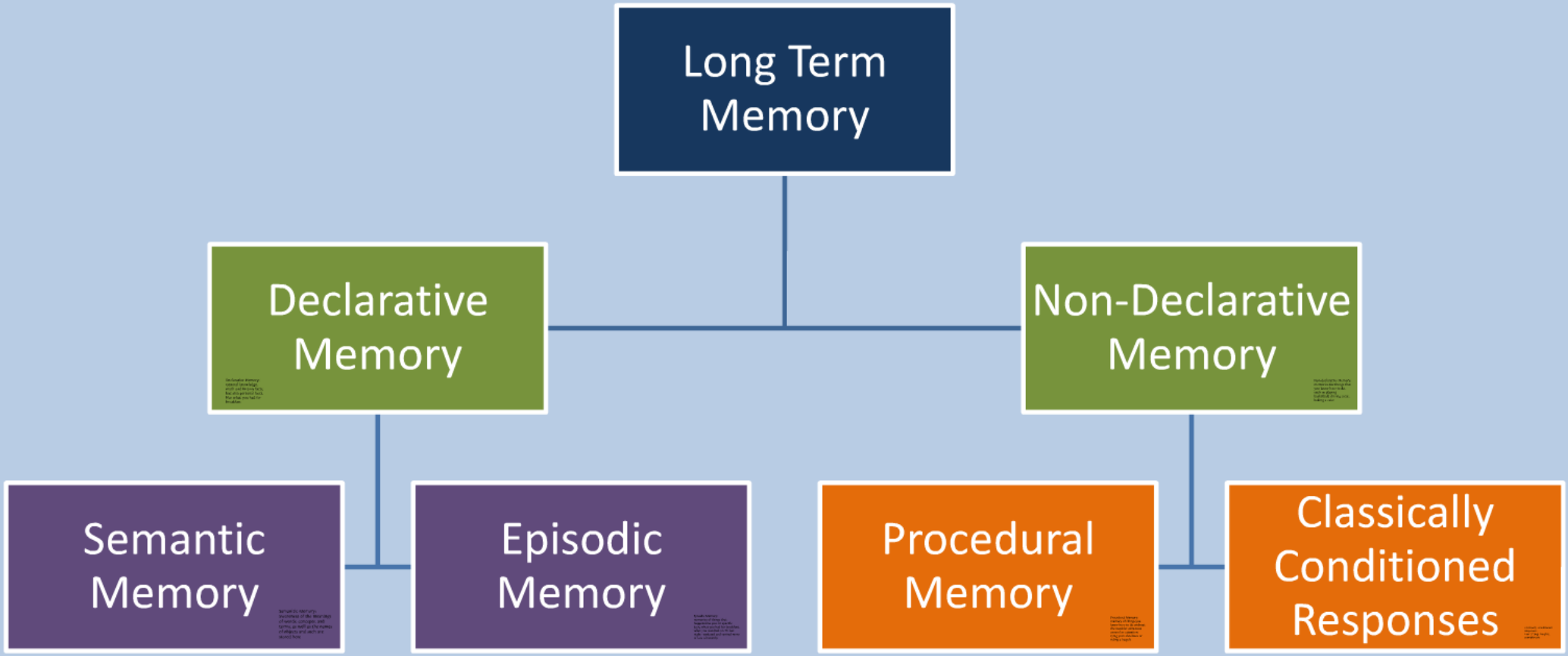
Non-declarative Memory: memories for things that you know how to do, such as playing basketball, driving a car, baking a cake.



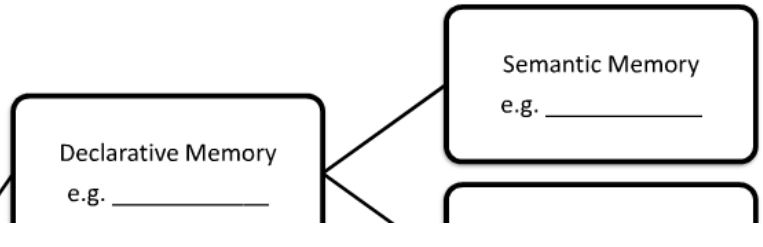

http://vsx.onstre

Procedural Memory: memory of things you know how to do without the need for conscious control or attention: tying your shoelaces or riding a bicycle

Classically Conditioned Responses:
Fear of dogs, heights, pumpkin pie

# Let's Practice!

## Long Term Memory >Exercise



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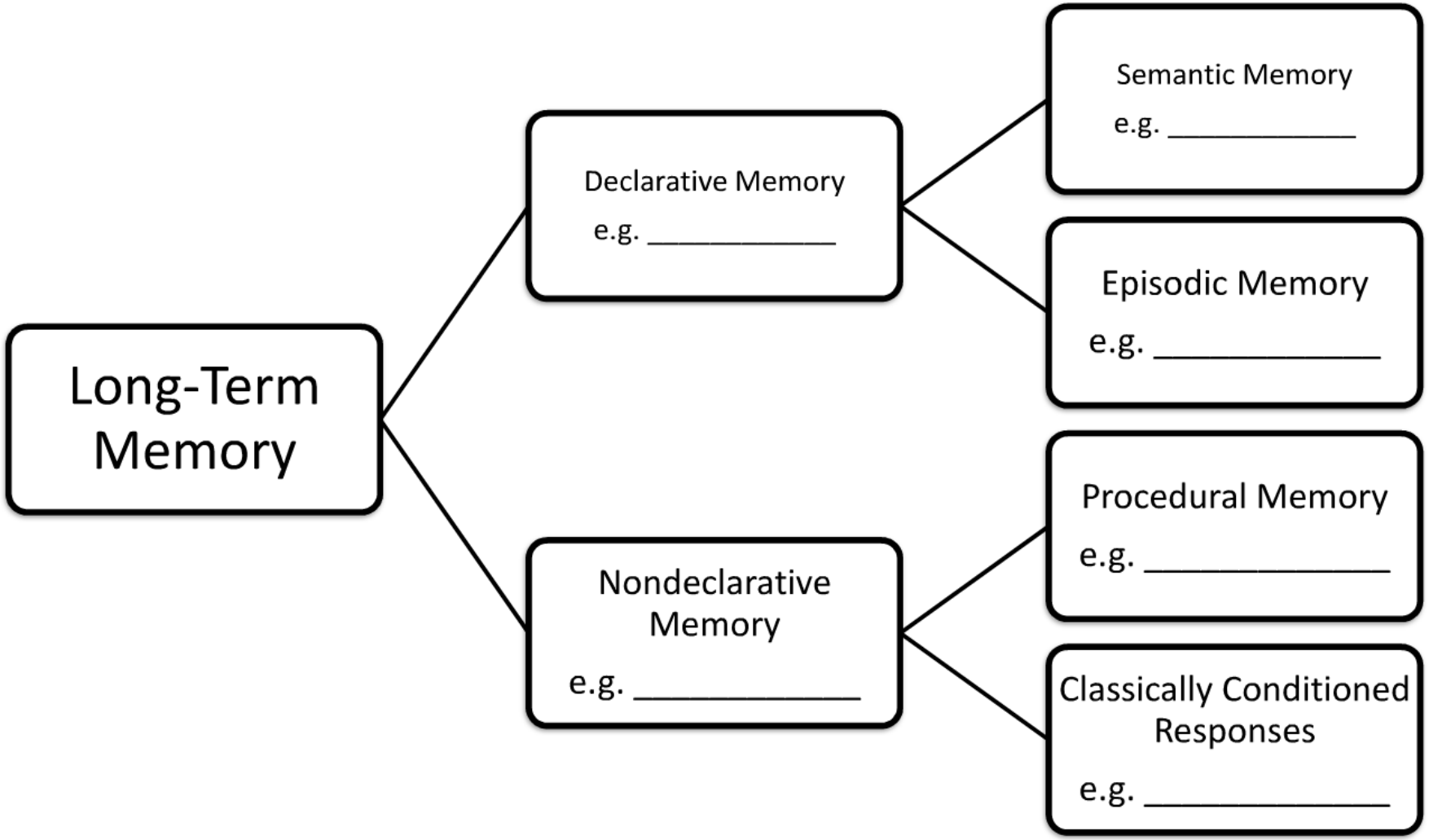

the time of retreival

# Retrieval of Long-term Memories

# Retrieval cues:

- a clue or a prompt that is used to trigger the retrieval of a long term memory
- recall

Recall:
memories are retreived or pulled from memory with few of no external cues
e.g. fill in the blanks test questions

- recognition

Recognition:
looking at or hearing information and matching it to what is already in memory
e.g. multiple choice question on a test

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questions

recognition

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# Test your Memory!

Walt Disney's
Snow White
and the Seven Dwarfs

Disney.com

## Encoding Specificity:

- the tendency for memory of any kind of info to be improved if the physical surroundings at the time the memory is made are the same at the time of retreival

## Retrieval Failure:

- It's on the tip of my tongue!
- you might remember how many letters the word is, or the name of the person's husband, but not the actual word or item
- tip of the tongue phenomenon

Let's try another test!

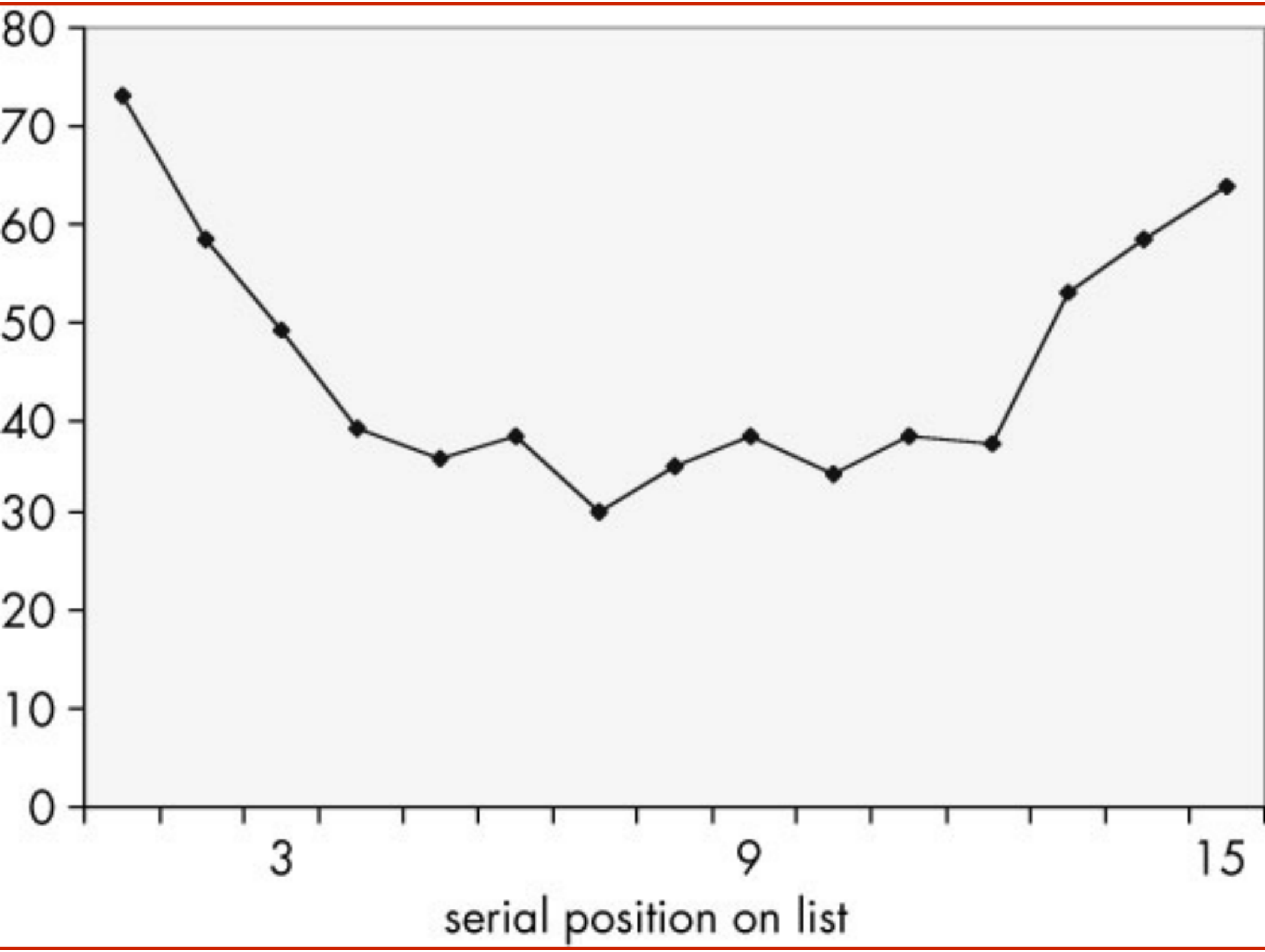
Recency Effect:

Serial Position Effect:

- Information at the beginning and the end of a list (poem, song, grocery list) tend to be remembered more easily and accurately than the words or items in the middle
- when the frequency of recall for each of the words in the list goes on a graph, it always looks the same - high rate of recall at the beginning and the end, low in the middle

Primacy Effect:
words at the beginning
of the list tend to be
remembered better
than those in the
middle of the list

Recency Effect:
the tendency to better remember the words at the end of the list - last few words have just been heard, still in Short term memory


80
70
60
50
40
30
20
10
0
3
9
15
serial position on list

Flashbulb memories:
memories around a specific, important, or surprising event that are so vivid they represent a virtual snapshot of the event

# Are your memories always accurate?

- Sometimes there is a tendency to revise older memories with new information
- it is also possible to create a false memory!

Let's try it!

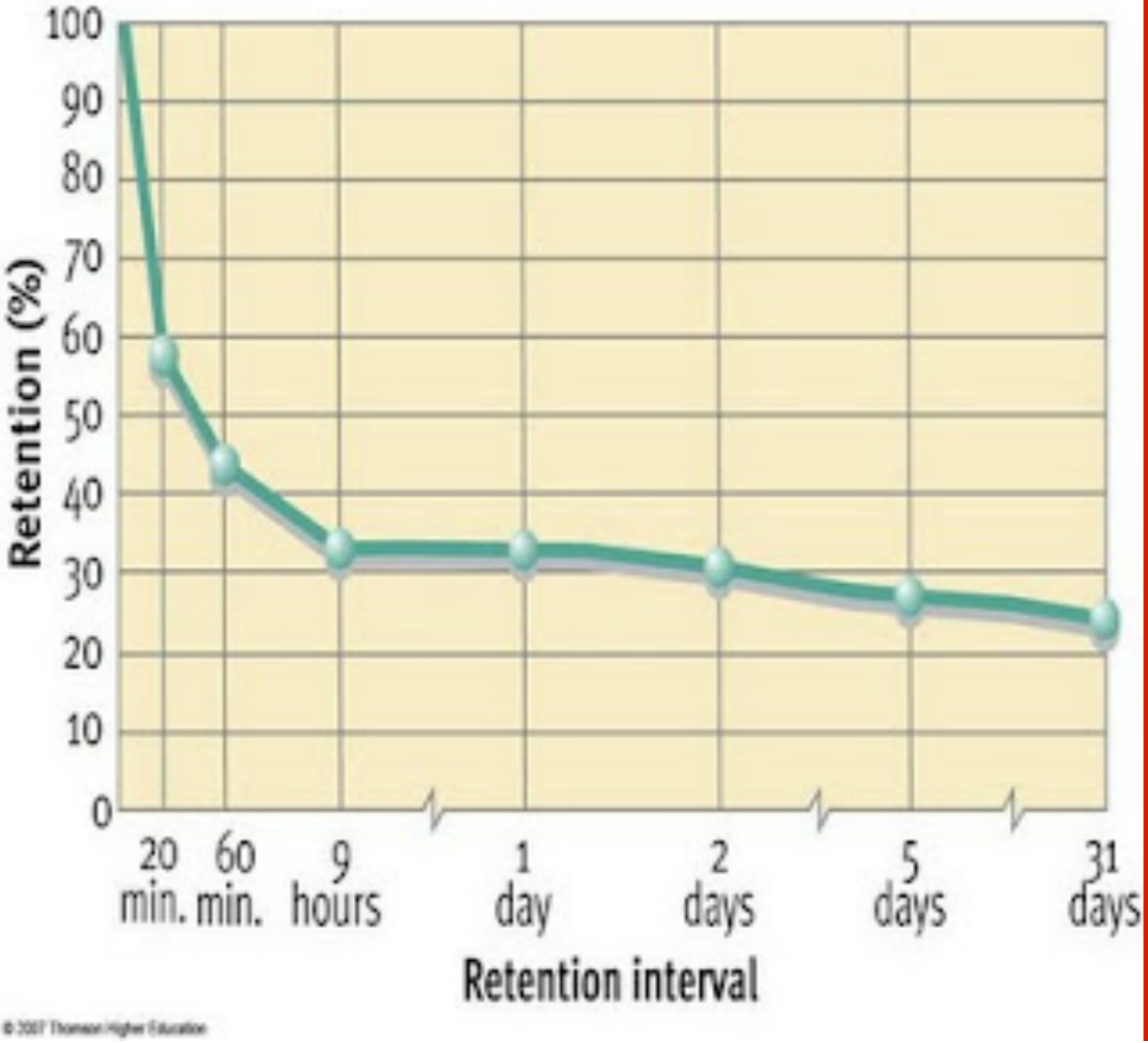
# Forgetting: When Memory Fails

a person without a normal memory faces great difficulties - just think of how troublesome it is when you forget someone's name!


YouTube

Ebbinghaus:

- memorized lists of nonsense words and tested himself to see how long he was able to remember them
- discovered that forgetting occurred systematically
- most rapid forgetting occurs in first 9 hours



# Why do we forget?

## 3 possible reasons:

1. Encoding failure →

2. Decay →

Memory Trace Decay Theory: According to this theory, memories deteriorate because of the passage of time

3. Interference →

Interference:

- causes information in memory to displace or block out other information, preventing it's recall
- Similar information can block what you're trying to recall
- distinctiveness helps make individual memories easier to recall

Encoding failure: if you don't put something away properly, you're not going to be able to find it when you want it - sometimes info simply doesn't get encoded in the first place

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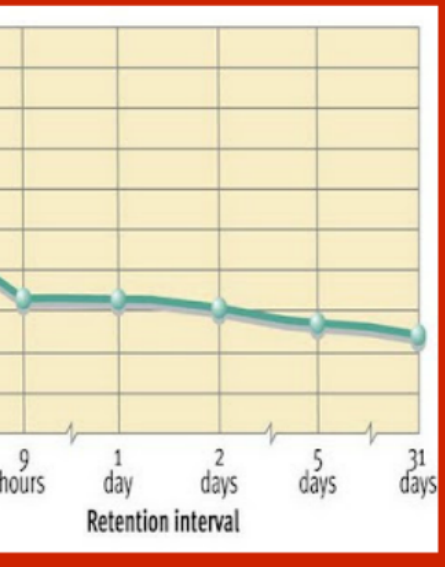
Anterograde amnesia - memory lost for events following an injury - still remember things from before the injury


9 hours
1 day
2 days
5 days
31 days
Retention interval


ADAMSANDLER
DREWBARRYMORE
When your girlfriend has amnesia
you have to win her over...every single day
50FIRSTDATES
COMING SOON...MAKE IT A DATE!


YouTube

Mnemonics

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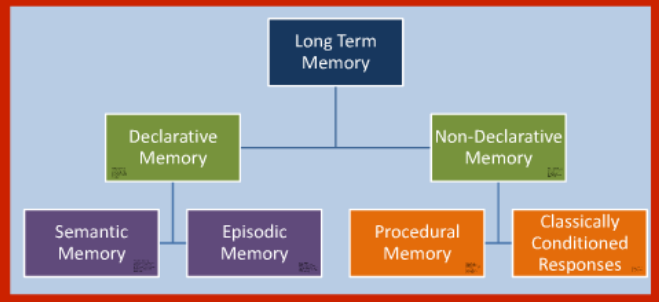


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