



Memory

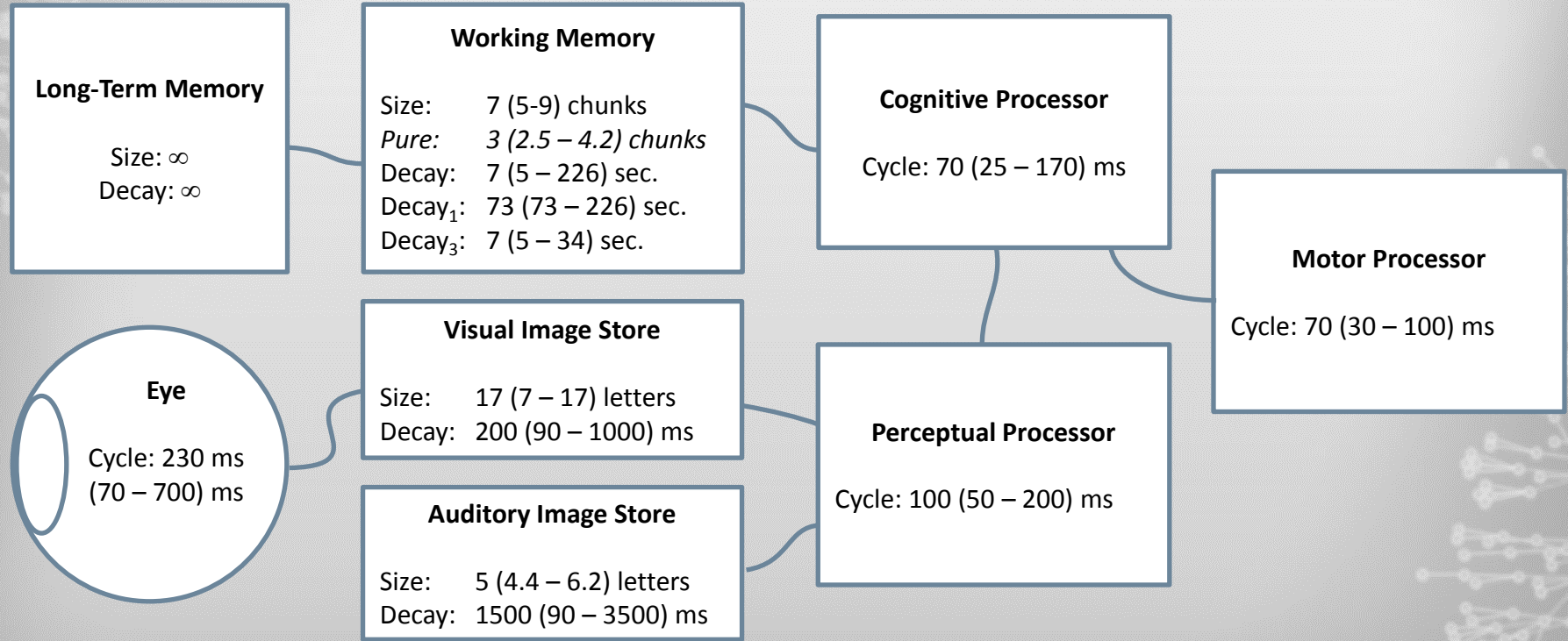
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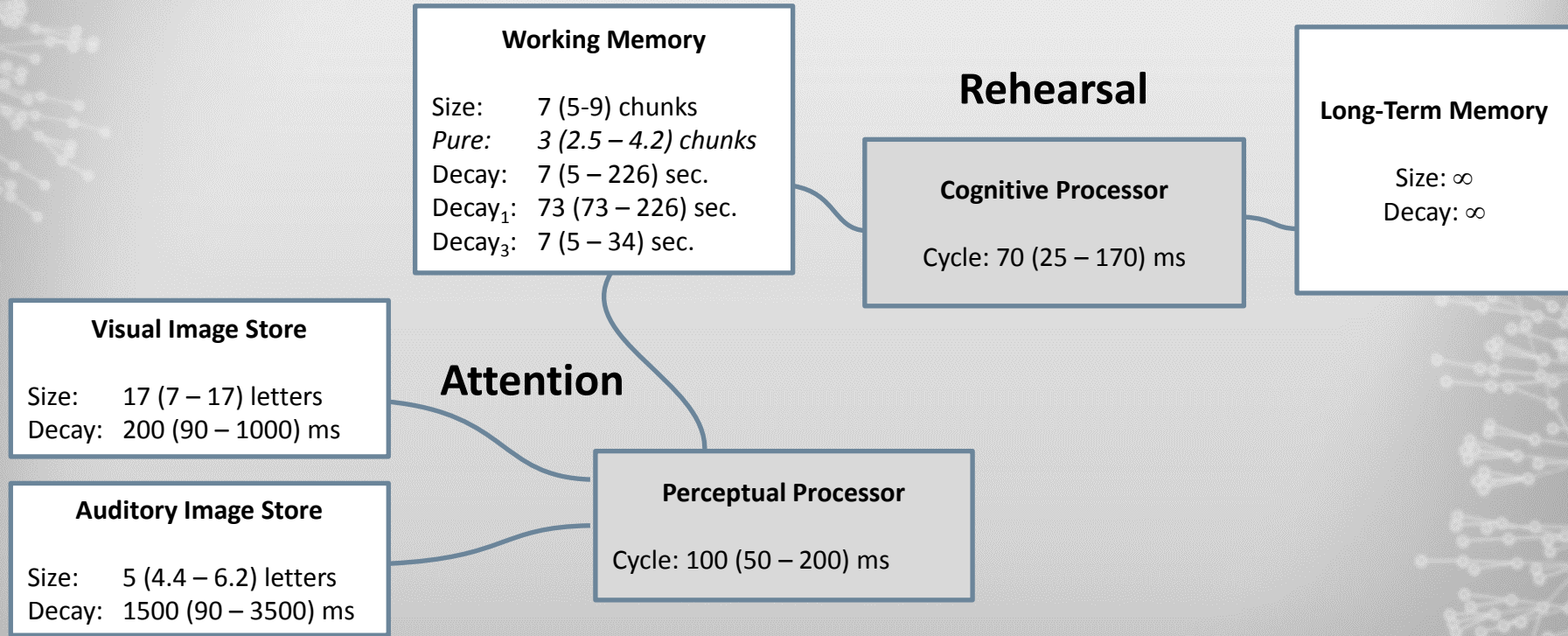
What Will We Learn

- What is the difference between short term and long term memory?
- How can I remember things better?
- How can I learn better?

The Model Human Processor



Memory



Sensory Memory

Human Device Memory

- *Iconic* memory - visual
 - Persistence of vision
 - .5 seconds
- *Echoic* memory - aural
- *Haptic* memory - touch
- *Arousal* - level of interest or need

Working Memory

Human DRAM

- 70ms access time
- 200ms *refresh* time
- Size: 7 +/- 2 items
(digits, chunks, words)
- *Recency* effect – last is best

Fun with Working Memory



Long Term Memory

The Human World-Wide Web

- Two types
 - *episodic* - events, organized temporally
 - *semantic* - facts, organized associatively
- Representations
 - semantic nets
 - frames (database w/field, entries)
 - scripts (roles, scenes, props)

How We Remember

How does information get from short term memory into long term memory?

- *Total time hypothesis* – hit the books
- *Distribution of practice effect* - don't cram
- *Meaning* - concrete better than abstract
 - faith age cold tenet quiet logic idea value past
 - boat tree cat child rug plate gun flame head
- Structure, familiarity and concreteness

1	bun
2	shoe
3	tree
4	door
5	hive
6	sticks
7	heaven
8	gate
9	wine
10	hen

How We Forget

- Decay
 - Logarithmically - forget most early
 - Jost's Law - if two equally strong memories at a given time, then the older is more durable.
- Interference
 - proactive inhibition – can't teach an old dog new tricks
 - retroactive interference – mind blown
 - emotion - good old days, forget the mundane

What Did We Learn

- Sensory memory decays very quickly, but supports sensory processing
- Working memory decays quickly, but supports cognitive processing
- Long term memories persist indefinitely, but the challenge is getting information stored
- We can learn and remember better if we vary learning styles