Memory

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0.1 Context

0.2 Learned in this study

0.3 Things to explore

- How is "experience" stored and retrieved in a non-expensive manner?
  - Lossy compression?
- Store unique/vivid characteristics
  - How does one determine what constitutes a unique characteristic?
- It is often suggested that strong emotions facilitate remembering, why is that?
- What is the impact of having access to the Internet on our need to memorize things such as laws or formulas?

1 Overview

2 Types of memory

- Implicit
  - Procedural
- Explicit/Declarative
  - Episodic
  - Semantic
  - Autobiographical
  - Spatial
  - Recognition

3 Brain structures

- Hippocampus
  - Mediates the recording of episodic memories
  - Identifies common features between episodes
  - Links these common episodes in a memory space
- Prefrontal cortex
  - Remembering contextual details of an experience
- Amygdala
  - Encoding and retrieval of emotionally charged memories

4 Memory experiments

- How can I access a given memory?

- How many numbers can I remember?
- How many letters can I remember?
- How many words can I remember?
- How many people can I remember?
- How many concepts can I remember?

4.1 Processing duration by medium

Medium	Duration
Text	?
Audio (voice only)	?
Audio (audible)	?
Vision	?
Taste	?
Smell	?
Heat	?
Pressure	?

- How long do we keep what was perceived by the retina in memory? (how many frames?)

- How long do we keep what was perceived by the cochlea in memory?

- We should expect to be limited by the maximal rate of neuron firing, but is it possible to communicate information faster?

Part of the brain continues to process images for longer than 13 milliseconds to respond positively after a sequence of rapid-fire pictures [1]

5 Unsorted

- We have the ability to access our memory at will
- The memory seems to be accessible in many ways and indexed through different means
- Maybe it is available in a graph form such that thinking in time period uses a region where indexing is done in that manner
- Some memories may be directly accessed if we aren't querying something of particular interest
- However, if we want to remember something more specifically, then we may enter a form of filtering where we query by asking for appropriate indexes
    - e.g., what was I doing in 2007 at school?

6 See also

7 References

- https://en.wikipedia.org/wiki/Memory
- https://en.wikipedia.org/wiki/Implicit_memory
- https://en.wikipedia.org/wiki/Procedural_memory
- https://en.wikipedia.org/wiki/Explicit_memory
- https://en.wikipedia.org/wiki/Episodic_memory
- https://en.wikipedia.org/wiki/Semantic_memory

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[1] http://www.dailymail.co.uk/sciencetech/article-2542583/Scientists-record-fastest-time-human-image-takes-just-13-milliseconds.html