[*Memory HACKERS*](https://www.youtube.com/watch?v=kvpX3VZMuyM)

*[PBS](http://www.pbs.org/video/2365663085/)*

1. Describe H-SAM Highly superior autobiographical memory

**Autobiographical memory**

Note: **episodic memories are specific personal events, not including semantic facts**

|  |  |
| --- | --- |
| What is autobiographical memory | What is NOT autobiographical memory |
|  |  |

2. Write about the researcher Brenda Milner and her subject H.M. or Henry Molaison. He had a bike accident and seizures.

His \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ was removed. Seizures go away BUT….

He could no longer form \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (amnesia).

While H.M. could not remember the events of his life or episodic memories. He

could learn \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ skills or **procedural memories**.

3. Eric Kandel (American neuropsychiatrist) created a classical conditioning experiment with a slug.

UCS\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ UCR extreme contraction of siphon/withdraw gill

CS\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ CR extreme contraction siphon/withdraw gill

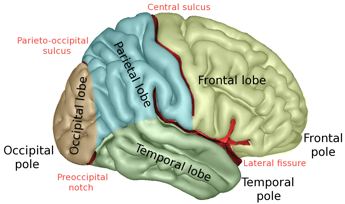
\*the slug remembers! Learned a reflex to something that meant nothing

**Long Term Potentiation:** Long term memories involve a structural, physical, or

anatomical change in the brain. That is neurons form \_\_\_\_\_\_\_\_\_ synaptic connections!

*This is the biological basis of learning and memory.*

4. LOBES OF BRAIN – how are memories stored in various neural networks throughout the brain?

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5. The theory of consolidation says that each memory is like file or book stored in our brain. However, **Karim Nader** disproves with this experiment with a RAT!

UCS\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ UCR \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

CS\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ CR\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A drug blocks protein that stores new memories. If memories were permanently seared in the brain, the rat should remember classical conditioning.

How does the rat react?

By the rat recalling the fear, the drug impacted its **retrieval**. **Proteins are required to recall *previous memories!!!***

6. Instead of seeing memory storage as consolidating/permanent, it reconsolidates. Explain.

7. Can human fears be erased? Kindt used Nader’s research!

The fear is recalled and CHALLENGED! A drug is given called propranolol, which blocks the release of

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the amygdala (threat detection area of brain). How is **reconsolidation** at work?

8. Memory is unreliable.

**Source amnesia**: facts are retained, but how or when or where the facts were learned are distorted

How does Elizabeth Loftus experience this?

**Misinformation effect:** misleading statements, ideas, or questions change memories

Explain the research

How did this research use deception? What are researchers required to do?

Loftus/Palmer (1974) Subjects were shown a video of a car accident. Each group was given different verbs to describe a car crash. In each condition, subjects reported how fast the cars in the video were traveling. Verbs for each condition included “contacted;” “hit;” “bumped;” “collided;” and “smashed**.” Illustrate a bar graph: When told “contacted” average was 30 miles per hour whereas when given the word “smashed” subjects averaged 41 miles per hour.**

What did you learn from the false memory tests? (Roedinger was on of the researchers and was mentioned in the film) -à link for teacher use only

<http://www3.nd.edu/~memory/Materials/DRM.pdf>

If absent, use online Northwestern version <http://www.mmlc.northwestern.edu/external/paller/memory-demo_content.html>