

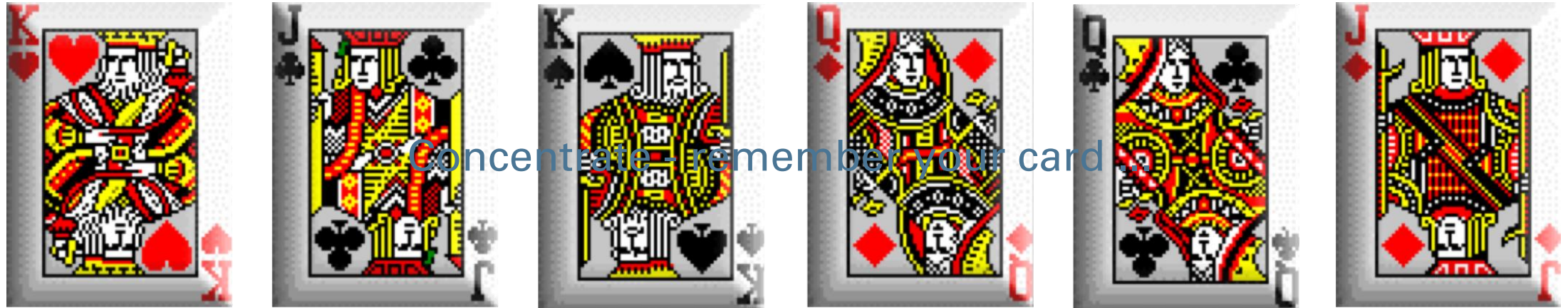
(IM)PERFECT MEMORY

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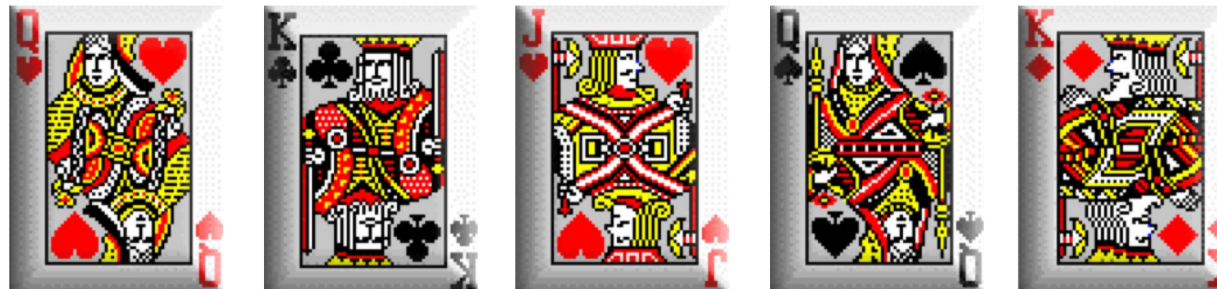
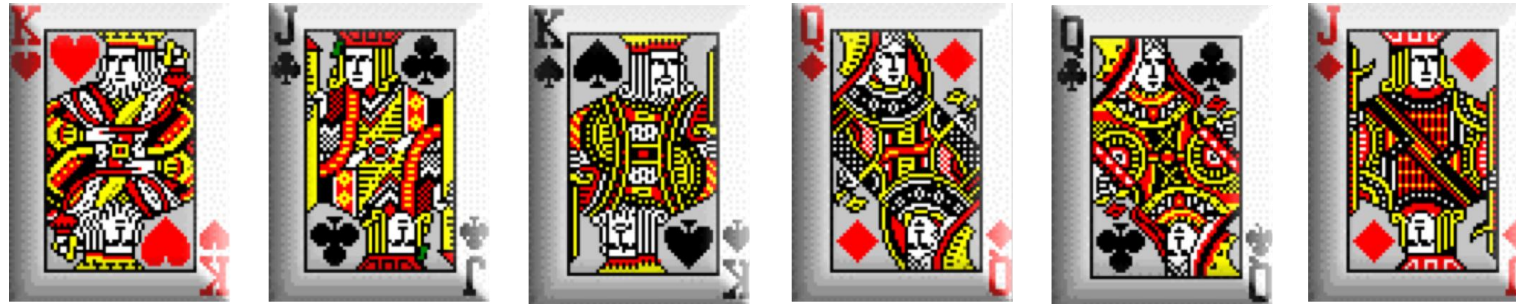
Pick a Card. Any Card



Aaaaand your card is gone...



Memory only for the gist



You have a limited capacity for working memory storage.

A little test of your long-term memory



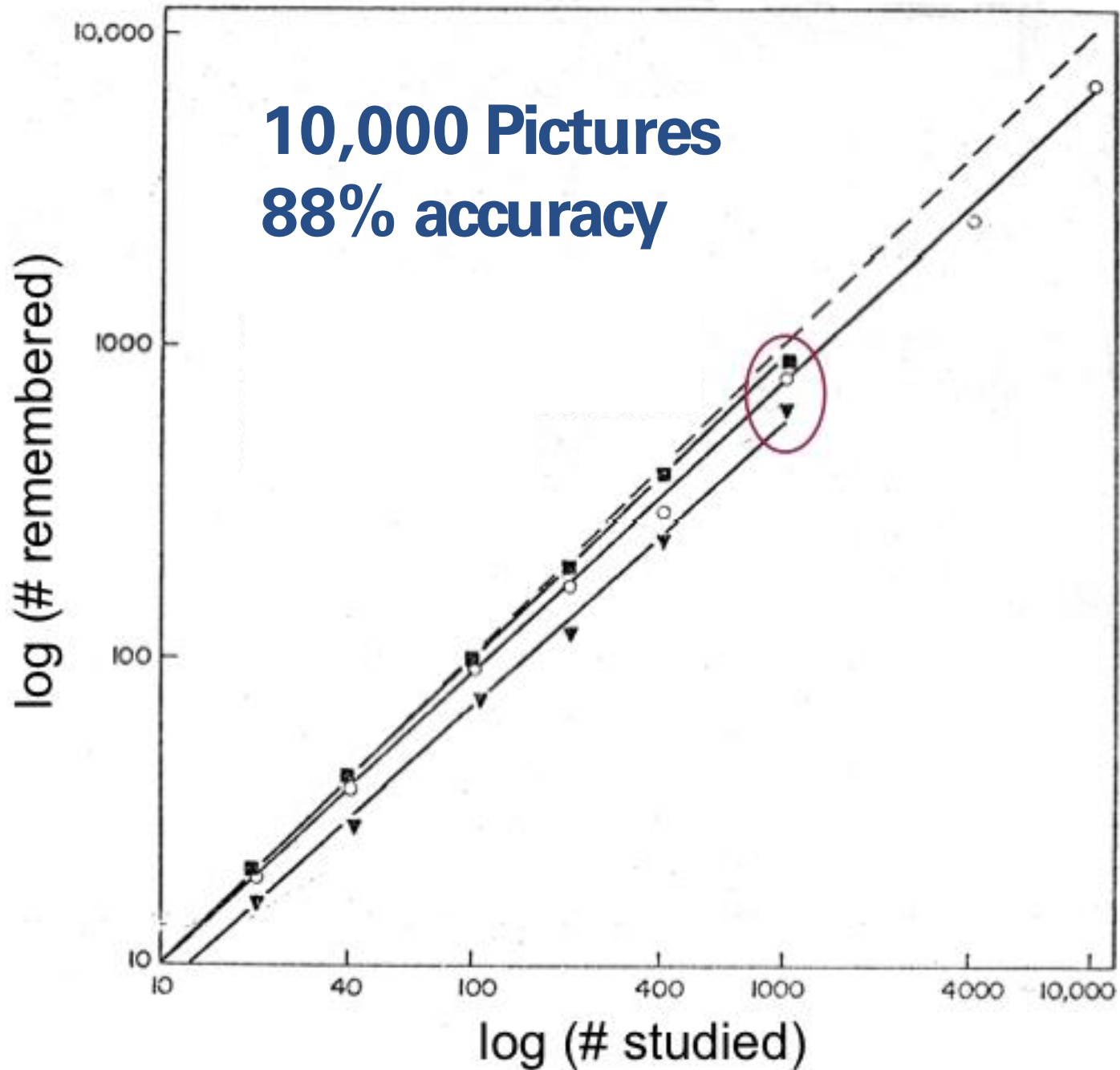








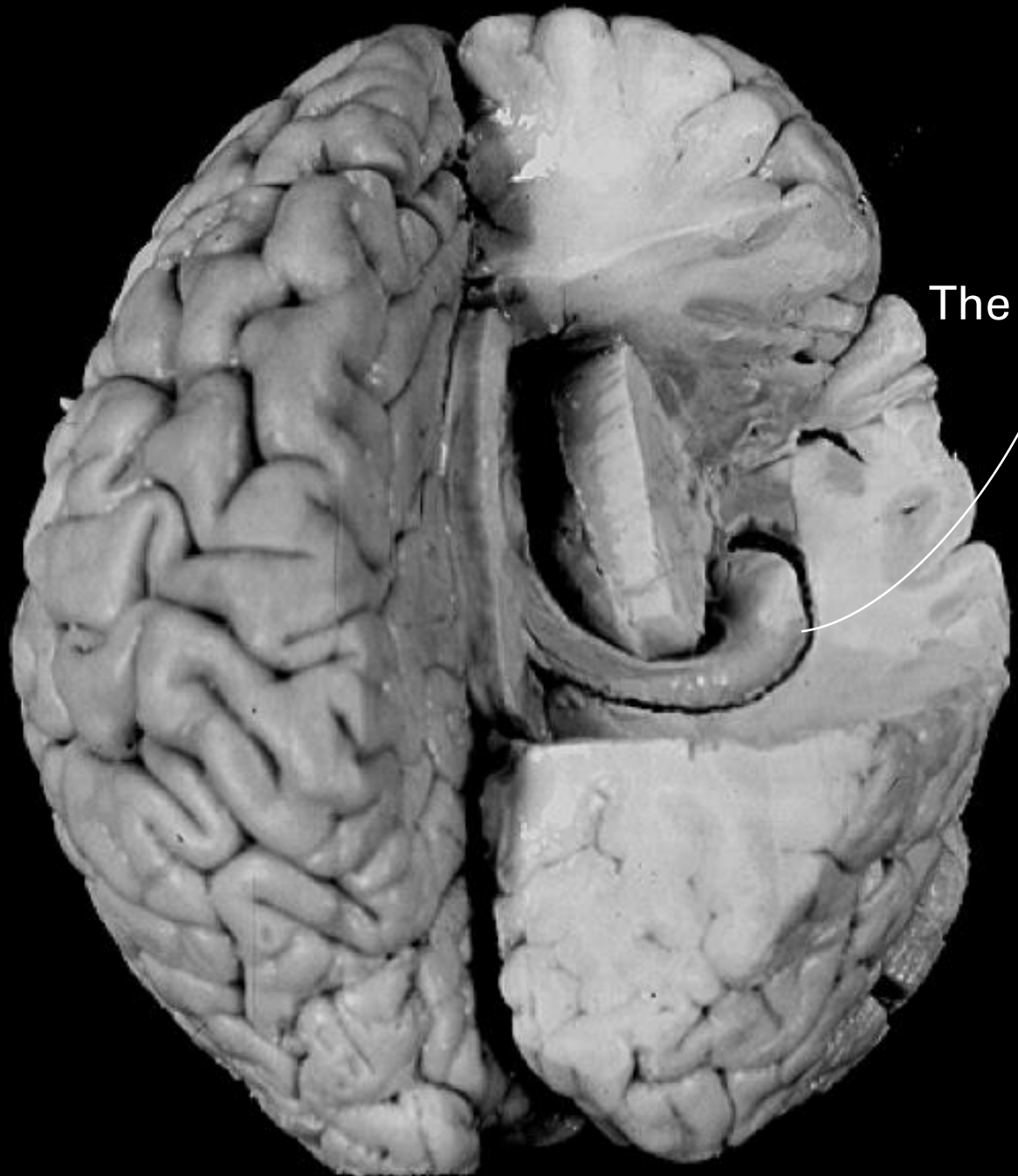
**How many could you possibly
learn?**



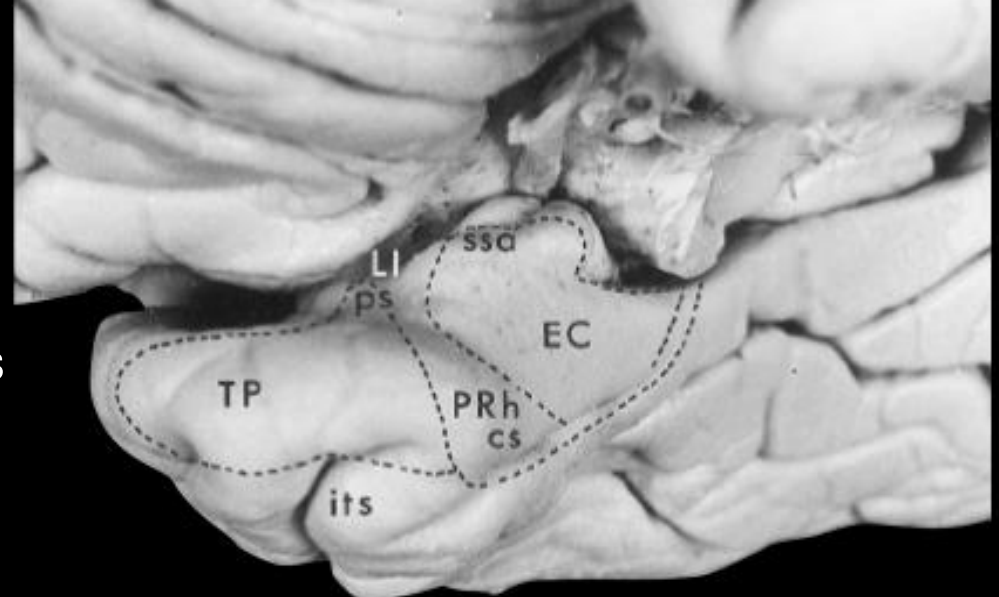
Lionel Standing (1973)







The hippocampus



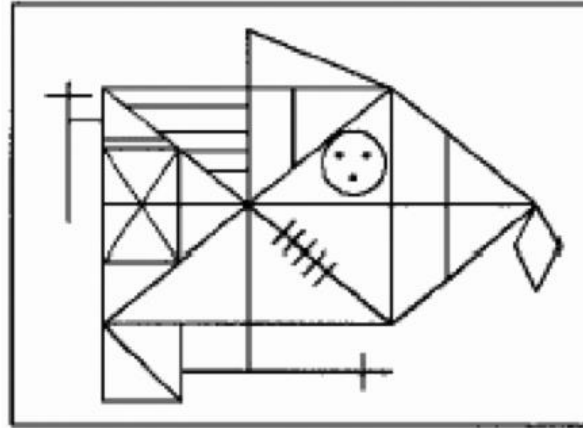


Henry Molaison



Brenda Milner

Rey-O Complex Figure Test



H.M.

copy 1020
11/53*

By Recall 11:20AM 9Sept. 1983
No recall of ever drawing
it.

The drawing by H.M. is a copy of the original stimulus. It includes the text "copy 1020 11/53*" in the upper right corner and a note at the bottom: "By Recall 11:20AM 9Sept. 1983 No recall of ever drawing it."

E.P.

The drawing by E.P. is a copy of the original stimulus, showing a high level of detail and accuracy.

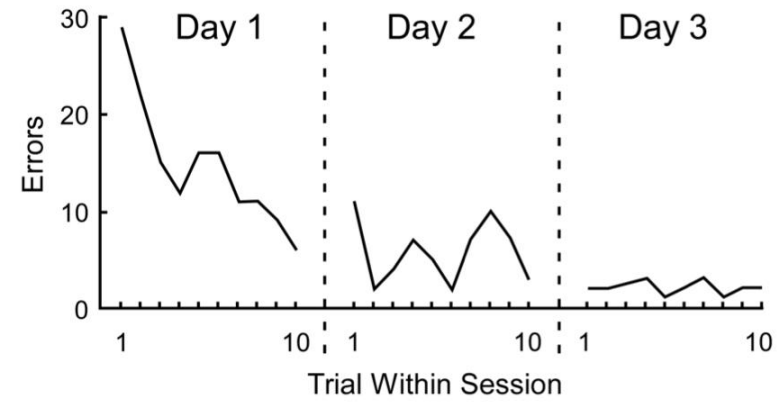
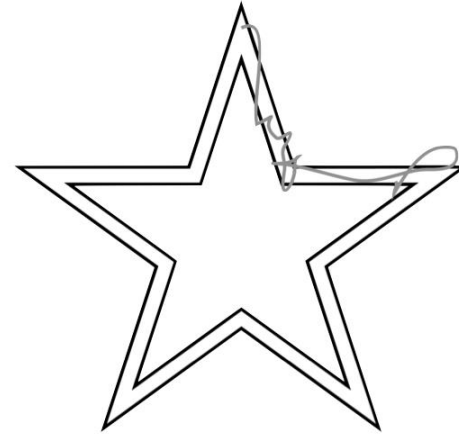
L.M.

The drawing by L.M. is a copy of the original stimulus. Below the main drawing is a second, simplified drawing of the figure, which appears to be a different interpretation or a partial recall.

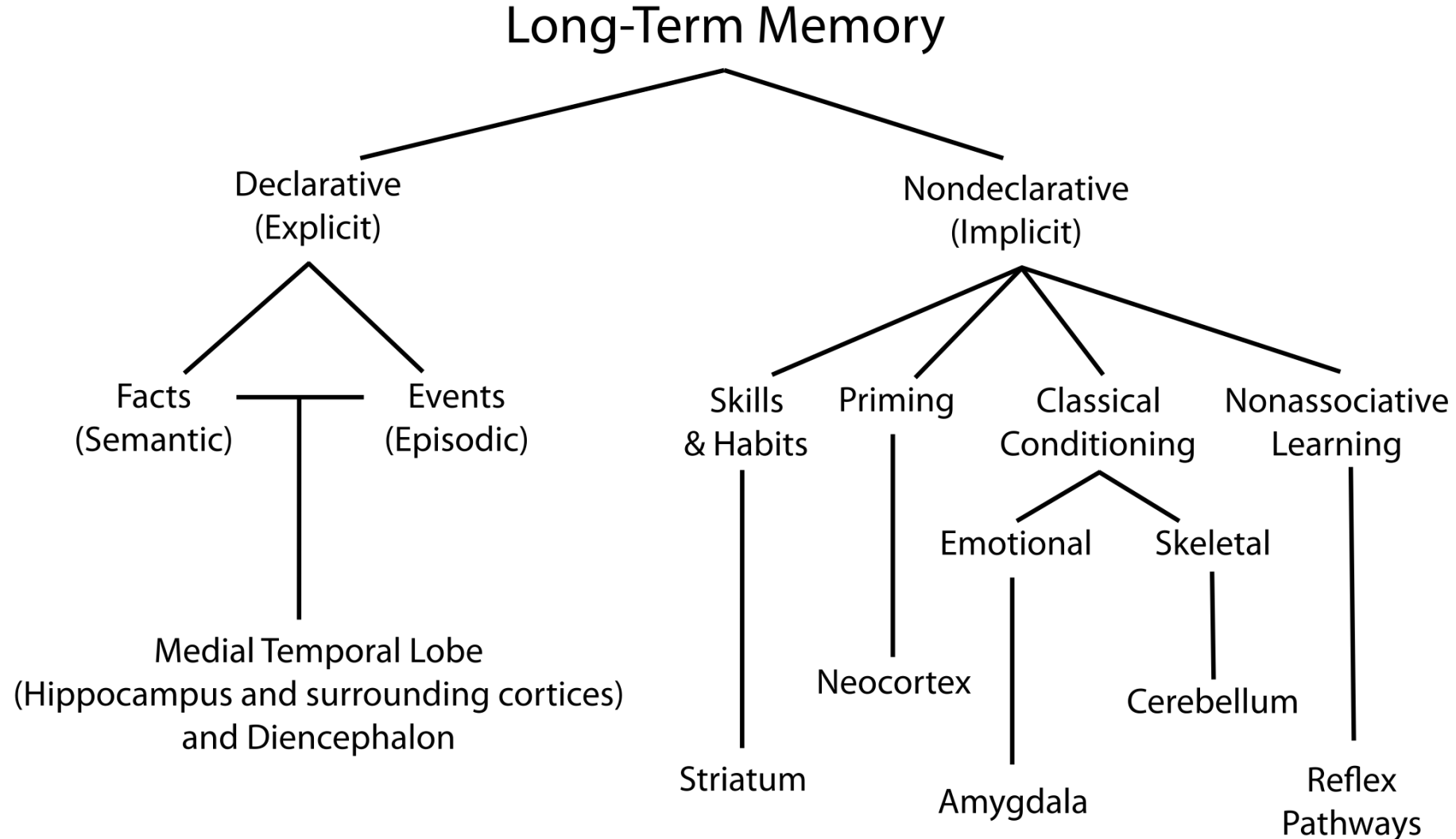
CONTROL

The drawing by CONTROL is a copy of the original stimulus, showing a high level of detail and accuracy.

Mirror Drawing Test



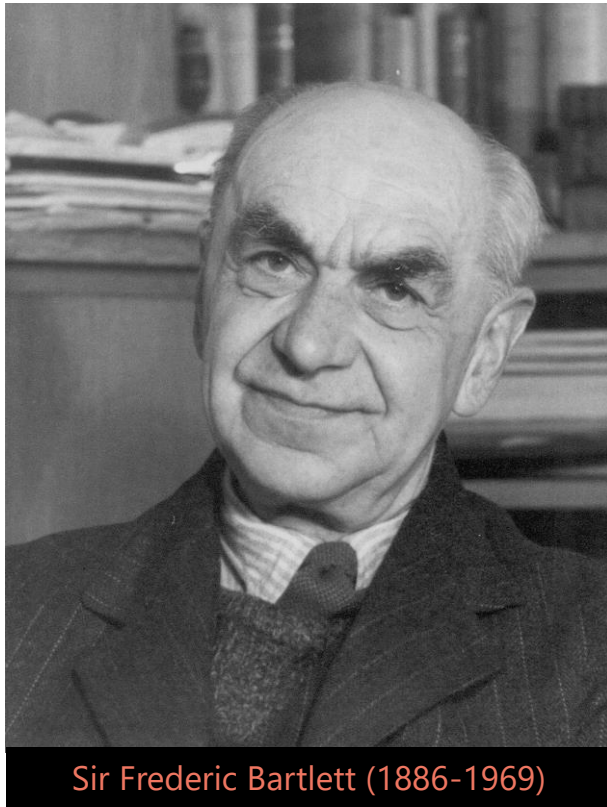
Multiple Memory Systems







Method of Serial Reproduction



Original Drawing
PORTRAIT D'HOMME

Reproduction 1
PORTRAIT D'HOMME

Reproduction 2

Reproduction 3
Portrait d'un homme.

Reproduction 4
Portrait d'un homme.

Reproduction 5
Portrait d'un homme!

Reproduction 6
Portrait d'un homme

Reproduction 7
Un homme Egyptien.

Reproduction 8
L'Homme Egyptien.

Reproduction 9
L'homme Egyptien

Original Drawing

Reproduction 1
Reproduction 2

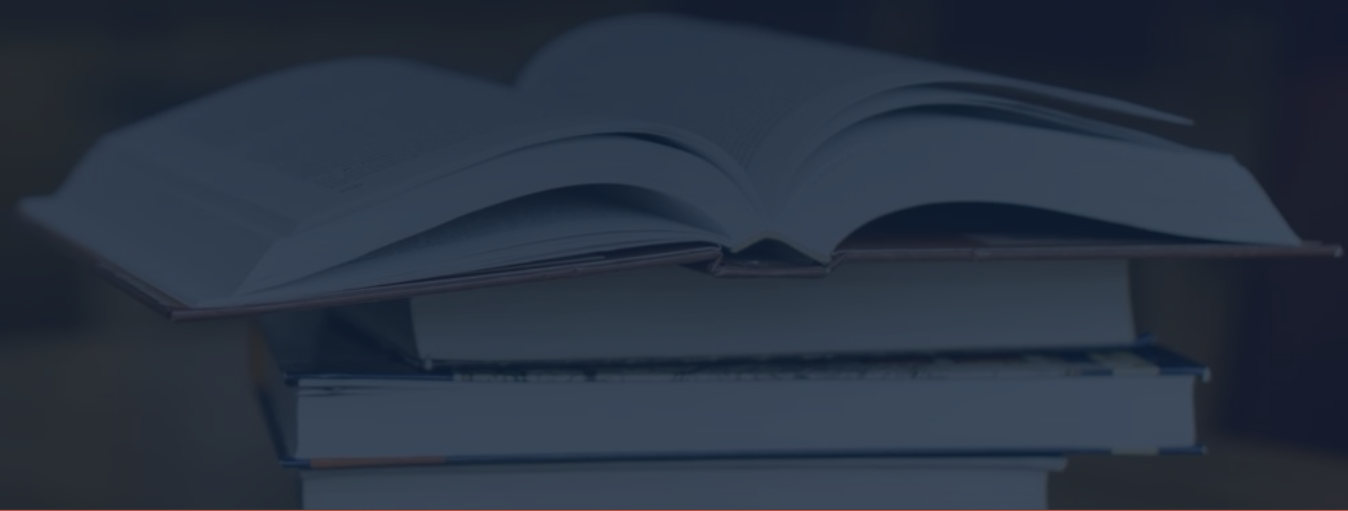
Reproduction 3
Reproduction 4
Reproduction 5
Reproduction 6.

Reproduction 7
Reproduction 8
Reproduction 9
Reproduction 10

Reproduction 11
Reproduction 12
Reproduction 13
Reproduction 14

Reproduction 15
Reproduction 16
Reproduction 17
Reproduction 18

Memories are **mental reconstructions** that are colored by **cultural attitudes** and **personal biases**, rather than being direct recollections of actual experiences.





Prof. Elizabeth Loftus

Eyewitness Testimony



Depiction of actual accident

smashed: 40.8 MPH

Leading question:
“About how fast were the cars going when they smashed into each other?”



Memory construction

hit: 34.0 MPH

The "Misinformation Paradigm"

Initial



Misinformation



"The car came to a yield sign"

No misinformation



75%



25%

Test



or



?

Misinformation



40%



60%

Implanting False Memories

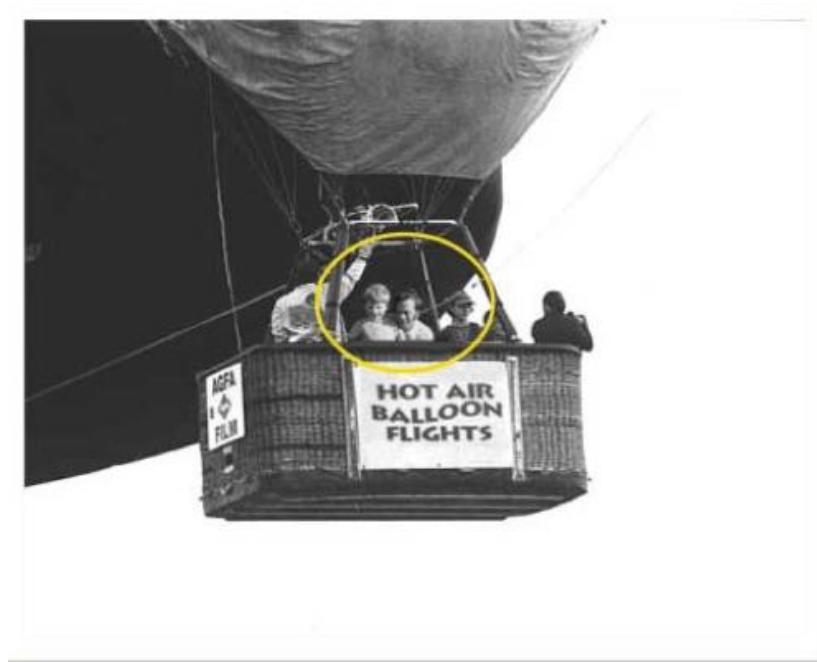
Recalling memories from going to Disneyland during childhood and interacting with the Bugs Bunny character.

Able to generate **impossible** false memories in **30%** of participants.



Implanting False Memories

Using fake photographs

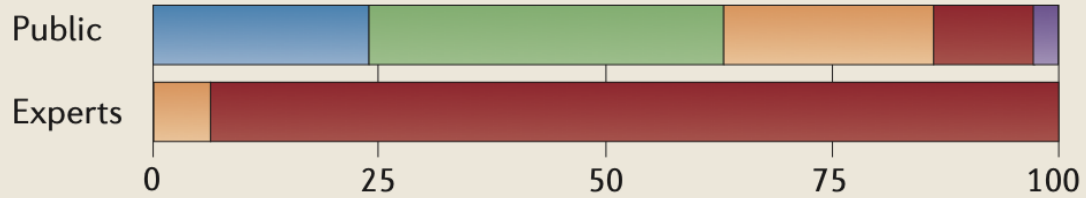


“I’m still pretty certain it occurred when I was in sixth grade, at the local school there... I’m pretty certain that mum is down on the ground taking a photo.”

Public Perceptions vs. Experts

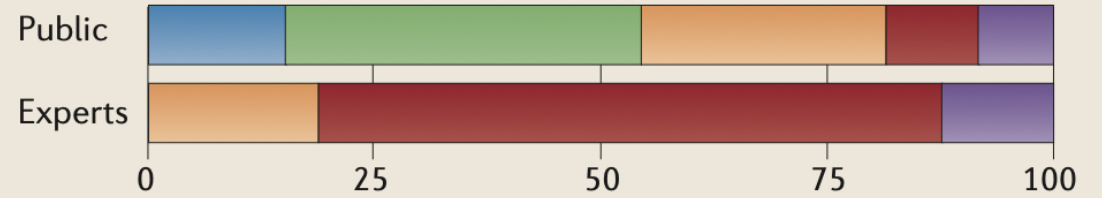
Video memory:

“Human memory works like a video camera, accurately recording the events we see and hear so that we can review and inspect them later.”



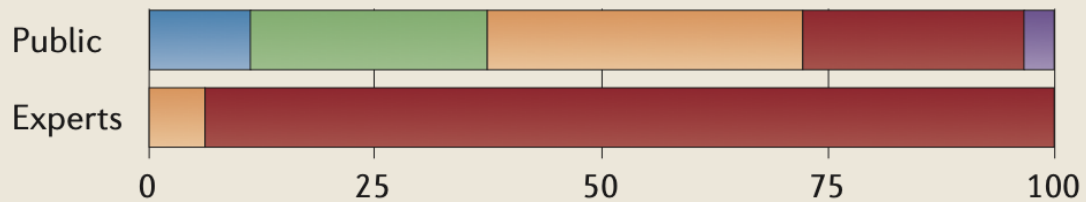
Hypnosis:

“Hypnosis is useful in helping witnesses accurately recall details of crimes.”



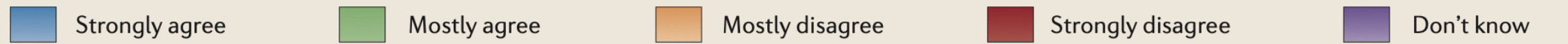
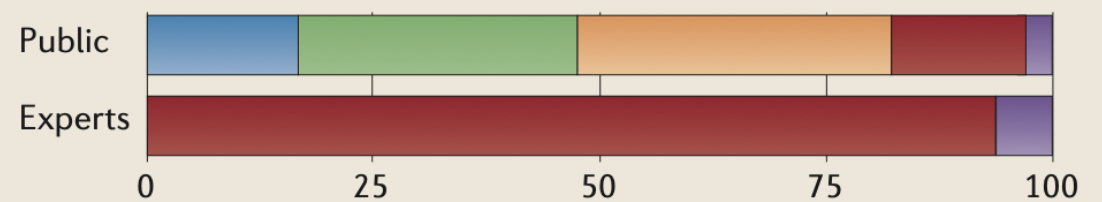
Confident testimony:

“In my opinion, the testimony of one confident eyewitness should be enough to convict a defendant of a crime.”



Permanent memory:

“Once you have experienced an event and formed a memory of it, that memory does not change.”



Key Take Home Messages

- Memory is who we are; it is the basis for our individuality.
- Memory capacity is vast! But its precision is akin to a compression scheme rather than veridical reality.
- Memory can be subject to illusions and false memories – a side effect of an otherwise adaptive system.
- Public perceptions about memory and the brain are dramatically different from experts who understand the reconstructive nature of memory.

