

Uses of memory

- Eyewitness testimony
- Metacognition and source memory
- Flashbulb memories

Fallibility of memory

- Memory is often a side-effect of comprehension
 - Remembering something for later is not the goal
- Some situations assume accuracy
 - Eyewitness testimony
 - People testify about their episodic memory
- Is episodic memory just a fuzzy readout of the memory encoded during the event?
 - Perhaps some details are lost?

Reconstructive memory

- The influence of scripts on memory suggests not
 - There may be intrusions based on comprehension of a situation.
- There are also effects of misleading information
 - Loftus



Eyewitness testimony

- First, people see a sequence of pictures leading to an accident.
- Later, they get a series of questions:
 - How fast was the car going when it ran the yield sign?
- Finally, they describe the scene
 - Sometimes they select the picture they saw.
 - Sometimes they are asked about key objects.

Misinformation effect

- People will misremember key aspects of a scene based on intervening information.



- There was a stop sign in the original.
 - The yield sign was mentioned in the question.

How does this happen?

- The question with the misinformation is asked in a funny way.
 - How fast was the car going when it ran the yield sign
- Given-new convention (we'll come back to this)
 - The presence of a yield sign is presupposed
 - The question is asking about speed
- If the information from the question and the picture are mixed, the misinformation effect can occur.

Confusion of sources?

- It seems strange to think that we could confuse a question with a witnessed event.
- How do we know the source of memories?
- Source monitoring (Johnson)
 - A type of metacognition
 - Metacognition: thinking about thinking
 - Types of sources
 - See something
 - Read something
 - Hear about something
 - We often remember the sources of our memories

Source memory is fallible

- What cues could we use to determine the source of a memory?
 - Is there a visual image along with it?
 - Could be a sign that we saw it.
 - We might have had a strong mental image during comprehension
 - Is there an episodic memory of the event when the information was presented?
- Sometimes, we misremember sources.
 - This can lead to faulty reconstruction

Metacognition

- Source memory is one kind of metacognition
- Metacognitive judgments about memory
 - How do we know whether we know something?
- Who is the President of the United States?
- Who is the President of Egypt?
- Who is the President of France?
- How do you know whether you know?
 - Obviously, if you retrieve an answer, you know.
 - You might retrieve a partial answer.
 - You might think the question is familiar.

Tip-of-the-tongue (TOT)

- Sometimes we know we know something
 - We cannot quite access the information
 - Often it is a word that will not come to mind
- Characteristics of Tip of the tongue states
 - Can often guess the first letter
 - Can often tell the shape of the word (such as the number of syllables)
 - TOT states can be frustrating

Familiarity and feeling of knowing

- We can often judge quickly whether we will know the answer to a question
 - This judgment can be influenced by familiarity
- Game show paradigm (Reder & Ritter)
 - See complex addition and multiplication problems
 - $23 * 15$ or $47 + 18$
 - Then, new problems are shown, with two options
 - Respond quickly that the answer is known--high reward
 - Respond slowly--low reward (low risk)
 - Fast responses are more likely to be made when the problem is familiar (even with a different operator)

Flashbulb memories

- People often have vivid memories of traumatic events.



What is a flashbulb memory

- Brown & Kulik
- Memories have vivid perceptual detail
- They are emotionally powerful
- Strong episodic content
 - Where you were
 - What you were doing
 - Who you talked to
- Possibly the result of a “now print” mechanism

But, are they real?

- The initial studies assumed they were real
 - Vividness was taken as a sign of veracity
- Later work disputes this conclusion
 - Neisser & Harsch
 - Had students write where they were when they heard about the Challenger explosion
 - Wrote the day after the event
 - Asked for the account again 6 months later
 - Many discrepancies were found
 - Even for people who felt their memories were very vivid
 - Suggests confidence may not indicate veracity

Jury is still out, though

- Challenger explosion may not have been traumatic enough to trigger a flashbulb memory
- In a study with an event more traumatic for the subjects, the memories were more accurate
 - Conway and colleagues.
- Suggests that more work remains to be done
 - It is difficult to do this work, because a public traumatic event is required.

Summary

- Eyewitness testimony
 - Episodic memory may be influenced by intervening events
 - Source memory may be a problem
- Metacognition
 - Source memory is one kind of metacognition
 - Feeling of knowing helps us determine what we are likely to retrieve from memory.
- Flashbulb memories
 - Vivid memories of traumatic events.
