Constructive memory

PSY 200
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Lecture 19

How good is eye-witness testimony?

Discrimination

- The task is difficult because you have to do several things
  - Recall information that might be related to the task from memory
  - Determine if the memory is actually for the correct event
  - Determine if the memory is actually for the correct moment in time
  - Gauge your confidence in the memory’s validity
- All of this suggests that performance on a memory task involves discriminating information
- To address the discrimination problem, people engage in a constructive process to report memories

No forgetting?

- Brain surgeon (Penfield, 1959)
  - Epilepsy patients
  - Stimulate brain regions before operating
  - Want to know what is being removed
- Conscious patients report vivid memories
  - Unable to recall normally
    - “she saw herself as she had been while giving birth to her baby.”
    - Stimulation of temporal lobes
- In the image, numbers indicate places where stimulation evoked different reported experiences

Penfield (1959)

- Even worse...
  - The memories are nearly impossible to verify
  - The few attempts find that the “memories” are not true
    - People describe places they have never visited, impossible events, fantasy...
  - The patients have epilepsy
  - Stimulation may have triggered something like an epileptic seizure (which can have hallucinations)
- It is more likely that stimulation “feels like” a memory, even though it is not
  - Your awareness of “remembrance” is a product of your brain
  - It can be stimulated, even without a real memory
- What do we mean by a valid memory?
Flashbulb memories

- Highly emotional events tend to produce strong memories
- e.g.
  - JFK assassination
  - Challenger explosion
  - Oklahoma City bombing
  - Earthquakes
  - September 11, 2001

Talarico & Rubin (2003)

- On September 12, 2001
- Asked volunteers to answer questions about their memory of
  - The WTC attack
  - An ordinary event (volunteer’s choice)
- Three groups for follow up
  - 7 days later
  - 42 days later
  - 224 days later
- Recalling of details was the same for WTC attack and ordinary event

Flashbulb memories

- People vividly recall details surrounding event
  - where they were when they heard
  - what people said
  - clothing worn
  - time of day,...
- People are confident about their reports
  - however...

Flashbulb memories

- The memories of the WTC attack were more vivid
- Subjects believed those memories were more likely to be reliable
- Ordinary memories
  - Faded in vividness
  - Belief decreased over time

Flashbulb memories

- Subjects confidence in their memory can be misleading
  - retelling of the story (“I remember vividly when Kennedy was shot, I was...”) probably reinforced the story
  - Maybe not the true memory
- Flashbulb memories are a real phenomenon about the experience of memory,
  - but probably not "super-memory"

Memory misattribution

- Donald Thomson was accused of rape and picked out of a lineup by the victim (Schacter, 1996)
- He was on live TV at the time of the rape
  - Ironically, he was discussing memory of faces for eyewitness testimony
- The victim
  - had the TV on at the time of rape
  - misattributed the face on TV for the face of her attacker
  - very accurate report of the crime, otherwise
Eyewitness testimony

- I will show you a series of slides and then ask you some questions
Questions

- Did the bus, which came by, come from the left or the right?
- Did another car pass the Red Datsun while it was at the intersection with the stop sign?
- Did you see a bicycle?
- Did you see the taxi cab?
- Did you see if the policeman wrote anything down?

Eyewitness testimony

- Later, show slides and ask subjects if they were part of the original set
  - real slide contains YIELD sign
  - fake slide contains STOP sign
Eyewitness testimony

- "Misinformation effect"
- Compare accuracy according to pre-test questions
  - Subjects without a misleading question -- 90% accurate
  - Subjects with a misleading question -- 20% accurate
- In a follow-up, the experimenters asked those with misleading questions if they thought they were misled
  » 90% say no
- Paying money for correctness also had no effect

Eyewitness testimony

- Loftus, Miller & Burns (1978)
- The misinformation effect gets stronger with a week delay before the memory test

<table>
<thead>
<tr>
<th>Delayed</th>
<th>Immediate</th>
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<tbody>
<tr>
<td>Consistent</td>
<td>80</td>
</tr>
<tr>
<td>None</td>
<td>50</td>
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<tr>
<td>Misleading</td>
<td>30</td>
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Memory implants

- Loftus has a procedure that "implants" a memory of being lost in a mall
  - Basically just have subject read a plausible story (with some details that could be true)
  - Get family members to pretend the story is true
  - Later the subject "remembers" the story as something that happened to him/her
- It is very easy for a therapist to "implant" false memories into patients

Conclusions

- Many techniques believed to provide accurate memories, do not
  - Flashbulb memories
  - Brain stimulation
- Memory is constructive
- Memories can be easily influenced by questions, interpretation, and context

Next time

- Amnesia
- Anterograde amnesia
- Retrograde amnesia
- Unusual characteristics
- Repression

- What’s wrong with my wife?