Constructive memory
PSY 200
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Lecture 19

How good is eye-witness testimony?

Memory test

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

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?

- Suggests that memories are stored but normally unreachable (context things again)

- Basis for ideas of memory repression (and a few self-help books)
  ▪ The results are usually misunderstood
  ▪ Actually only occurred for 5% of patients

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
    - ... 

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

- Flashbulb memories
  - 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

- 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
- Key test is for a pair of slides (between subjects)
  - 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

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

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
- CogLab on Forgot it all along due.

- What’s wrong with my wife?