Amnesia

PSY 200
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Lecture 20

What is wrong with my wife?

Fundamental fact

- There is no method other than object physical evidence to verify the accuracy of a memory
- Memory is a cognitive experience
  - Confidence in the memory is another cognitive experience
  - You can be very confident and still be wrong
- Of course, we must be correct fairly often, or our lives would be a total mess!

Amnesia

- Loss of memory or memory abilities
  - retrograde: forgetting events prior to the injury
  - anterograde: forgetting events after the injury
- In most cases amnesia is limited in scope and duration
  - like when my brother Joe slipped while playing frisbee

Amnesia

- Scope and duration
- Retrograde amnesia for one patient

What's wrong with my wife?

- Nothing!
- But she cannot remember anything before her senior year in high school
  - motor cycle accident
  - complete retrograde amnesia

An unusual case

- Side issues
  - Sense of smell
  - Mild anomia
  - Odd aphasia (language deficit)
- She is able to learn and remember new information
- Remarkably unaffected by the loss of memories
  - Personality
  - Parents
  - college
  - makes study of retrograde amnesia difficult
What is lost?

- How can someone who loses their childhood memories go to college the next year?
  - memories cannot be “wiped clean”
  - perhaps they are just not directly accessible
  - forgetting ≠ recall problem?

More generally,

- while patients with retrograde amnesia forget their names, parents, addresses,…
  - they do not generally forget how to walk, talk, solve problems
    - although they may have problems…
  - different types of memory systems
    - controversial!

Memory systems

- there are many different types of memory
  - amnesia seems to affect declarative more than nondeclarative memory

Anterograde amnesia

- some patients have amnesia that preserves past memories but prevents formation of new memories
  - many are long-time alcoholics who did not eat properly
    - which leads to a thiamine deficiency
    - which leads to Korsakoff’s syndrome
  - leonard in memento

Patient HM

- surgery on hippocampus (to control epilepsy)
  - anterograde amnesia
    - unable to learn anything new
  - thought it was 1953
    - shocked by age of face in his mirror
    - could not stand to read newspapers
    - reintroduced himself to doctors, nurses,…
  - could carry on a conversation!

Anterograde amnesics

- fairly normal STM digit span (~7 items)
- but very difficult to extend digit span
  - how many trials to repeat back list correctly?
Serial position curve
- Normal recency
- Abnormal primacy
- Consistent with STM-LTM dichotomy

Patient HM
- Could learn some things!
  - E.g., location of hospital cafeteria
  - E.g., mirror drawing task

Patient HM
- Mirror drawing task (Milner, 1968)
- HM had no knowledge of doing the task before!

Amnesia-like memory
- Some aspects of memory seem very much like amnesia
  - Infantile “amnesia”
  - Repressed memories
- Careful studies are difficult to come by because the memories (and absence thereof) must be verified
  - Remember the “fundamental fact” at the start of today’s lecture

Infantile amnesia
- Most people report that they cannot remember anything that happened to them before age 4 years

Infantile amnesia
- Reason is unknown, but the best theory goes like this...
  - Children younger than 4-years-old view the world differently from adults
  - By encoding specificity, one needs to be in a similar state as study to best recall something
  - Adults are very different from children, and this prevents recall of early memories
Repression

- Psychotherapists (e.g. Freud) suggested that infantile amnesia occurred because much of childhood is filled with painful events and memory of the pain is prevented by psychological defense mechanisms (repression).
- This is very unlikely
  - people do remember painful events well
  - laboratory studies find no evidence of repressed memories

Repression

- In a laboratory, showing evidence of repression requires
  - being unable to remember something
  - being able to recover the memory through therapy
  - proving that the recovered memory is accurate

Repression

- In therapy, clinicians often claim evidence of repression with
  - dream interpretation
  - patterns in symptoms
  - recovering a memory through hypnosis
- None of these techniques demonstrate a verified memory
- Among carefully controlled memory research, there is no evidence of repression!

Conclusions

- Retrograde amnesia
- Anterograde amnesia
- Learning in anterograde amnesics
- Infantile amnesia
- Repression

Next time

- Encoding specificity
- Levels of processing
- Judgments of learning
- Practice testing
- Learning styles
- How to improve your memory without spending $20.