

Memory and Personal Identity



Clicker Question

You fall asleep in class and your classmates play a trick on you—they transport you to an unfamiliar room, put you in different clothes, cut and dye your hair, etc. Then you wake up. How do you connect the you that fell asleep to the you that woke up?

- A. You remember falling asleep.
- B. Your body appears the same to you as the body you had when you fell asleep
- C. You have the same memories, same plans for the future (but for the new desire for revenge) as the person who fell asleep
- D. Other (be prepared to say what)

The Memory Theory of Personal Identity

- John Locke asked: "wherein identity consists?"
 - Not sameness of soul or body
 - But "as far as . . . Consciousness can be extended backwards to any past action or thought, so far reaches the identity of that person"
- Idea of self-identity defined in terms of sequence of linked memories
 - Consider James on the continuity of consciousness—would we have such a sense without memory?



Episodic Memory and Personal Identity

- Hume: what we are is a bundle of memories—where memories are episodic memories of life episodes.
- What memories seem critical to self identity?
 - If we lost these memories, would we be the same person?
 - If someone replaced many of these memories with others, would we still be the same person?
- Patients who lose memory of their past lives (like GR) report a loss of identity
- Is the kind of memory that creates identity unique to humans?

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Building Autobiographies



Marya Schechtman (1994):

- "Psychological continuity theorists see memory as adding to the constitution of identity brick by brick, as it were, each individual memory adding one more bit of connection until there is enough to say there is sameness"
- "the fact of being a rememberer—of having the sort of memory system I do—allows me to see myself as a creature with a past, and so allows me to have the sort of psychology which makes me a person. Furthermore, the fact of having the particular memories I have, processed as I process them, is what makes me the particular person I am"

Clicker Question

Which of the following best describes you?

- A. My decisions about what I will do in the future are only minimally informed by the narrative I have constructed of my life so far.
- B. While visiting a place where no one knew me, if I were to suffer extreme amnesia so that I could not remember my name, where I have lived, what I was doing, I would still act in much the same way as I do now.
- C. Were I to suffer such amnesia, I would be lost—I would not know how to act or what I would like. I would be pretty much nothing.
- D. Were I to suffer such amnesia, I would find myself free to live life as I wanted, unencumbered by expectations other have of me.

The Complexity of a Self

- Neisser (1987) distinguished five selves (or five features of a self)
 - Ecological—perspectival relations to an environment, especially via perception
 - Interpersonal—specific relations to other organisms, especially kin
 - Extended—episodic memory (time-travel) (autobiography)
 - Private—qualitative experiences and private soliloquies
 - Conceptual—self representation, including constructed biography



Clicker Question

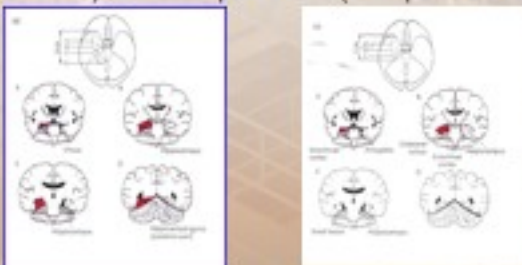
What deficits did H.M. exhibit after removal of parts of his medial temporal lobe (hippocampus) to relieve epileptic seizures

- A surprising increase in the number of seizures.
- A loss of the ability to learn new tasks such as mirror drawing.
- A loss in the ability to form memories of things that happened to him after the surgery.
- A loss of memories of his childhood.

Kinds of Long-term Memory: the Legacy of H.M. (Henry Molaison)



- Bilateral resection of hippocampus and surrounding cortex in 1953 at age 29 for intractable epilepsy
 - Led to significant reduction in number of seizures
 - But had profound effects on his long-term, especially episodic, memory for both new events (prospective amnesia) and recent past events (retrospective amnesia)



H. M.

- No effect on IQ, personality, etc.
- Graded retrograde amnesia for several years prior to surgery
- Severe anterograde amnesia
- Short term memory (nearly) normal
- Can learn new skills (such as mirror tracing)
- Spatial memory, even for a house not lived in until after the surgery, is good
 - Even remembered his address (semantic)



Clicker Question

Taking into account all that you know of H.M., project what it would be like to be him. What concept of yourself would you have

- Quite a normal one, just lacking in a few details. I still know myself as a person walking around the world.
- A frozen one—unchanged since 1953. I would feel like an outsider to the 21st century.
- A very confused one—I would not be able to construct a coherent narrative about who I am.
- Other (be prepared to specify).

On Being H.M.

- H.M. likes detective shows, doing crosswords, and watching TV. However, it is impossible for him to make new friends as he cannot remember a person for any longer than ten minutes. He lives in a world where, for him, Truman is still President. When he is told again of his mother's death evokes the same painful grief for a short period of time, and then, it is gone. He never really knows exactly how old he is, but reckons that he is about 30. When he looks into a mirror, he is shocked by the reflection. [But note what Corkin says!]
- Corkin notes
 - Even his early memories lack an episodic character
 - H.M. has a distinct personality, sense of morality, conscience
 - Seems to have some perspective on his own condition
- H.M. commented on his situation:
 - "... what I keep thinking is that possibly I had an operation. And somehow the memory is gone... and I'm trying to figure it out... I think of it all the time. I don't remember this, and why I don't remember that... It isn't worrisome in a way, to me, because I know that if they ever performed an operation on me, they'd learn from it. It would help others."

Where is H. M. Now?

- After his death in 2008, H. M.'s brain was removed and sent to Jacopo Annese at UCSD, whose team sliced H.M.'s brain into 2401 slices
- The slicing was streamed live
- And a play has been written and performed titled 2401 Objects that tells H.M.'s story from the point of view of his brain



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Forgetting our Episodic Memories

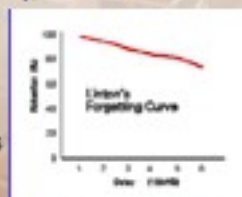
- Marigold Linton: self study (in the 1970s and 1980s) of the natural history of memories
 - Over 6 years Linton daily wrote down brief descriptions of events from her life (5,500 items)
 - Challenge: to write events down briefly yet retain distinctiveness after first time for event (first trip to Europe)
 - Each month she drew pairs of items semi-randomly from the event pool (totaling about 150 items per month) and
 - Tried to place them in proper chronological order
 - Tried to reconstruct each item's date
 - Briefly noted her memory search strategy
 - Reevaluated each item's salience



Forgetting, failing to discriminate, etc.

During the fourth year, "I began to encounter a few old items that simply did not 'make sense'. . . . [I]tems that I could interpret meaningfully shortly after they were written did not, at the time of the crucial test, permit me to reconstruct a sensible whole."

- Rate of forgetting: after first year (<1%), flat curve (5-6%)
- A common way Linton "forgot" events was by losing the ability to discriminate the memory of one event from another—sometimes yielding only a general memory of a type of episode



Effect of frequency of event type on semantic/episodic character of memory

- "Number of trials (or experiences) has contrastive effects on episodic and semantic memories. Increased experience with any particular event class increases semantic (or general) knowledge about the event and its context. Increased experience with similar events, however, makes specific episodic knowledge increasingly confusable, and ultimately episodes cannot be distinguished." (Linton, 1982, p. 79)

From Semantic to Episodic to Semantic

"It seems plausible that a fairly small number of general schemes provide the basic framework for storing episodic information. These schemes organize the event in terms of actors, action, location, and the like. These elements that comprise the building blocks of *episodic* memories are themselves information from our semantic store. . . . A specific event is a unique *configuration* of these elements. As our experience with a particular event type increases, we seem at first to make finer discriminations among related events. . . . At some point, however, this expansion of elements and configuration ends. . . . As similar events are repeated, the specific configurations—the patterns that link familiar elements to form unique episodes—themselves become a well-established potentially confusable part of semantic knowledge." (Linton, 1982, p. 81)

Emotion in Linton's self study

- Evaluated emotional salience at initial writing and each recall
 - Very low correlation between initial emotional salience and later success in recall
 - Change in emotional salience from encoding to recall
 - Habituation of emotional response if event type repeated (including response to memory of initial events)
 - Later changes in judgment depending on what followed: "Just as historians must interpret and rewrite history as time passes, so we all rewrite our own personal histories. Few of us are wise enough to be able to predict at the time of their occurrence how significant events will prove to be." (Linton, 1982, p. 88).
 - Did the new person we met become a lover/spouse?
 - Did you accept the job offer or not?

Condensation in Autobiographical Memory



- Larry Barsalou tried to elicit from undergraduates autobiographical memories about their summer vacation
 - Spent only 21% of the time reporting specific events
 - Much of the time spent summarizing events
 - I went to a lot of movies
 - We often just hung out at the mall
 - Even when constrained to only report events, subjects kept summarizing
 - And had a difficult time recalling specific events
- Condensed memories: group episodes from many different events into one

Clicker Question

According to Wilson and Harris, what effect does time have on our autobiographical memories

- A. We tend to remember our past selves less favorably than at the time.
- B. We tend to forget more events from earlier in our lives than from more recent periods.
- C. We tend to remember more events from earlier in our lives than from more recent periods.
- D. We tend to remember our earlier self more favorably than we judged it at the time.

Remembering the Self that Fits My Current Narrative

- Wilson and Ross explore how individuals change their memories in light of their current self, often enhancing the contrast with their current self
 - Better now than in the past, thereby enhancing the favorable view of themselves now
 - The longer the subjective time from the past, the more negatively the past is judged
 - With negative memories, people enhance the subjective time difference
 - Shift from first (recalling the event from one's own point of view) to third person (remembering oneself in the event) perspective
 - Third person point of view brought less distress

Field vs. Observer Views

- Negro and Neisser (1983) found that individuals sometimes recall events from their 1st person, field perspective, and sometimes from a 3rd person, observer perspective
 - Older memories tended to be from an observer perspective and to be less vivid
- Libby and Eibach (2002) found subjects were more likely to remember events inconsistent with their current self concept from a 3rd person, observer view
 - 3rd person view a "distancing mechanism"



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Eileen Franklin's Recovered Memory

While George Franklin is driving his daughter Eileen to school, they come across her friend Susan and give her a ride. Instead of going to school, Franklin drives his minibus down to Half Moon Bay, stopping in the woods. Eileen and Susan play in the minibus while Franklin gets inside the minibus and starts playing with them. Eileen is in the front seat when she sees her dad climb on top of Susan Nason. "My father pinned Susan to the floor. His legs pointed towards me and he held her arms spread out. He leaned on his elbows that were up against his, eh...body, he started rubbing against her, eh... rubbing, up and down... and eh, ...he kept on doing this until I climbed over the passenger seat to see what they were doing. I got really scared when I looked at Susan's face."

Eileen Franklin's Recovered Memory

Eileen reports she tried to make herself invisible until her father stopped. Then she and Susan get out of the minibus. Susan walks up to a rock where she tries to sit down. Eileen stays next to the minibus and picks up a leaf. When she looks up she sees the autumn sun shining through the trees. Behind Susan appears the shadow of a man who holds a large rock above his head. Susan raises her arms to protect herself. She looks at Eileen. Her eyes are filled with fear and powerlessness. A few seconds later the rock crushes Susan's skull. Eileen puts her hands against her ears to block out the sound of breaking bone.

Eileen and George Franklin

- In 1989 and 1990 Eileen Franklin recovered memories of her father murdering her 8 year old girlfriend, Susan Nason, in 1969.
 - Eileen also remembered seeing him murder a woman in 1976 in an unrelated incident.
 - George Franklin was convicted of the 1969 murder.
 - DNA tests later showed George Franklin innocent
- Evidence subsequently found accounted for all of George's time on the day in question
- At various points Eileen claimed her memories occurred
 - In a dream
 - Under hypnosis during therapy (she denied this at trial, but her sister later admitted that they lied about not being hypnotized)
 - While looking at her 5 year hold daughter

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Discrepancies in Eileen Franklin's memory

- Eileen remembered that she and Susan had played hooky from school on the day of the murder
 - Susan had gone to school that day and had returned home and talked to her mother at 3 PM.
- Eileen remembered her father taking a mattress from the back of the van and covering Susan's body with it
 - A newspaper account mentioned a mattress
 - The murderer had covered the body with a box spring (or couch?) too large to fit into her father's van
- Eileen remembered that Susan was wearing a "silver ring with a stone in it"
 - Such a ring was described in a newspaper account at the time
 - Ellen was wearing two rings: one plain silver ring and a gold ring with a topaz

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Where did Eileen's memory come from?

- Much of what Eileen testified to had been reported (sometimes erroneously) in newspaper accounts
- Having read such accounts, Eileen may have constructed false memories
- Nonetheless, they shape who she is
 - "They are her reality"

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Clicker Question

You are on a jury and the prosecution has presented testimony in which a witness has told his/her own experience of a horrific event. How would you evaluate the testimony?

- A. Give it the highest credence. Testimony from personal experience is the most reliable evidence.
- B. Trust only the testimony that corresponds to reports from the time, such as newspaper coverage.
- C. Trust only the testimony that corresponds to physical evidence.
- D. Discount the testimony on the grounds that most memories are reconstructed and distort what happened.

Erasing Memories

- Some memories can be extremely painful
 - Memories of physical attacks, wartime horrors, etc.
 - Posttraumatic stress disorder—PTSD
- Some people would like to eliminate these memories
- Although it was once thought that memories, once laid down, were permanent, there is increasing evidence that after recall, they must be reconsolidated
 - Interrupting this process with agents such as propranolol and U0126 can significantly weaken these memories
- Should people be allowed to alter memory in such a way?