What is autobiographical memory?
• Memories for events and issues related to yourself
• Similar to episodic memory with a few extras
• Initially of interest to researchers because they assumed it was more resistant to distortion than other memory types (yeah you can be tricked into thinking you saw a word you didn’t but you wouldn’t remember something personal and relevant incorrectly would you?)
• Neisser’s story shows you can make mistakes though

• generic personal memory:
  – similar to a specific experience, except that the event is repeated or a series of similar events occur and are represented in a more abstract form (e.g., now getting married for the 5th time --> memory of any particular wedding might be difficult to locate and might not contain many distinguishing features)

Characteristics of autobiographical memory
• long-term recollection of general features of an event (some recall of a few specific details of an event)
• interpretations of an event
  – Memory of your wedding day...
    • What happened? --> memory for general features and specific details
    • What was it like? --> interpretation
    • Note: two people can have two different memories of the same event and both can be correct

Autobiographical Memory Outline
• What is autobiographical memory?
• Bartlett
• Testing autobiographical memory
• Characteristics of autobiographical memory
• Types of autobiographical memory
• Vividness: Flashbulb memories
• Eyewitness memory
• Repression
Interesting aside

- Not necessarily a defining characteristic of autobiographical memory but...
- Rubin (1987) – “we remember more about the periods in time that define us as people” (e.g., reminiscence bump, age 16-25)
- Reminiscence bump initially made researchers think that autobiographical memory was resistant to distortion…not so
- I have my own interpretation (not accepted by anyone else, you will not be tested on it)

Bartlett

- Remembering (1932)
- Wanted to go beyond Ebbinghaus’ study of CVC’s and investigate memory for more meaningful material

- Bartlett suggested that in remembering material/episodes, individuals did 3 things:
  - Leveling - making the story simpler
  - Sharpening - highlighting and overemphasizing certain details
  - Assimilating - changing details to fit one's personal background / knowledge base
- Led to the conclusion that memory is reconstructive
- So autobiographical memory has been tested since at least the 1930s…why don’t we know more about it?

The problem with testing autobiographical memory

- Questions of accuracy (can’t be determined like it can be in a controlled lab experiment)
- Questions of full disclosure (are you going to tell embarrassing personal stories to a complete stranger)
- And of course, the underlying problem of all memory research, does it generalize outside of the laboratory?

Ways to test autobiographical memory

- Galton’s cuing technique (1883)
  - Recall a personally related event to a cue word
  - problems: too open-ended
- Autobiographical memory schedule (Kopelman, Wilson, & Baddeley, 1989)
  - Ask people about personal info and events from different periods of one’s life…usually used to compare memories across time periods
  - This is what led to the discovery of the reminiscence bump
  - Neat demonstration – next week or next year
Ways to test autobiographical memory

• The diary entry method (Wagenaar)
  – Cued to write down what you’re doing at various points during the day
  – Problems: extremely time consuming, personally invasive
  – Researchers usually use it on themselves

Specific examples of autobiographical memory: Flashbulb memories

• Perhaps one of the most popular and most studied forms of autobiographical memory
• memory for the situation in which you first learned of a very surprising and emotionally arousing event
• typically memories of events of national or international significance
  – the assassination of JFK
  – the assassination of MLK
  – the Challenger explosion
  – the verdict in the OJ Simpson trial
  – Princess Diana’s death
  – September 11th (lots coming out on this)

Six ‘Canonical’ Categories of Information in Flashbulb Memories (Brown & Kulik, 1977): You can try this at home kids!!!

• place - where were you?
• ongoing event - what were you doing?
• informant - who told you / how did you find out?
• affect in others
• own affect
• aftermath

Brown’s account of the JFK assassination

• “I was on the telephone with Miss Johnson, the Dean’s secretary, about some departmental business. Suddenly, she broke in with: “Excuse me a moment; everyone is excited about something. What? Mr. Kennedy has been shot!” We hung up, I opened my door to hear further news, as it came in, and then resumed my work on some forgotten business that ‘had to be finished’ that day.”

Kulik’s account of the JFK assassination

• “I was seated in a sixth-grade music class, and over the intercom I was told that the president had been shot. At first, everyone just looked at each other. Then the class started yelling, and the music teacher tried to calm everyone down. About ten minutes later I heard over the intercom that Kennedy had died and that everyone should return to their homeroom. I remember that when I got to my homeroom, my teacher was crying and everyone was standing in a state of shock. They told us to go home.”

Major determinants of flashbulb memories

• high level of surprise
• high level of emotional arousal
• consequentiality
• more likely to be rehearsed

Criticisms of flashbulb memories

• veridicality - cannot take accounts at face value as being accurate, no matter how confident people sound
Neisser

- Just because flashbulb memories seem exceptionally clear, does not mean they are not prone to distortion
- Neisser’s earlier Pearl Harbour example
- Neisser and Harsch (1992) asked subjects to describe what was happening when they heard about the Challenger explosion then asked again two and a half years later
- Scored out of 7 for overlap…average score was?
- How many got 7 out of 7 (out of 44 subjects)

Confidence

- Most people are highly confident in their memories. In the Challenger study, subjects indicated a high confidence
- No correlation between confidence and accuracy, even with flashbulb memories
- Inconsequential since accuracy is rarely important, but what about situations when accuracy is important?

Eyewitness testimony (another precursor to false memory)

- Is it actually possible to tell the truth, the whole truth, and nothing but the truth? Instruction assumes people have encoded the “truth"
- Loftus, Burns, & Miller (1978)
- Post-event misinformation seems to reliably lead to incorrect memories regarding the original source
- Interesting side story here: Loftus at APS a few years back

Distortions: Interference

Loftus, Miller & Burns (1978)

- Study phase - film of car accident
- Test phase 1:
  - About how fast were the cars going when they _______ each other?
  - “contacted” → mph, “smashed” → mph
- Test phase 2:
  - Was there any broken glass? (NO)
  - “contacted” → yes, “smashed” → yes

Distortions: Interference

Loftus, Miller & Burns (1978)

- Study phase: Film of car accident
- Test phase 1:
  - Did the car stop at the _______?
    - intersection (neutral)
    - stop sign (correct)
    - yield sign (misleading)
- Test phase 2:
  - force choice recognition: stop or yield sign?
  - Altering responses based on questions that are misleading is known as the misinformation effect
Why does the misinformation effect occur?

- Loftus suggests 2 reasons
  - Misinformation acceptance
  - Source confusion

Psychologists

- You’d think experts on the misinformation effect would be less prone to experiencing it but no…
- Quite frequently, psychologists incorrectly cite other researchers views or confuse someone’s set of experiments with another (deGroot, chess experts)

Repressed & recovered memories

- How do we interpret these?
  - With Great Caution!!

Loftus

- Lost in the mall
- Spilling the punch bowl
- Does confidence predict accuracy?
  - Subjects asked about likelihood they experienced 40 typical childhood events
  - 2 weeks later, participants asked to imagine each of the 40 events
  - 2 weeks later, likelihood ratings were higher
  - “imagination inflation”

Loftus’ 3 suggestions for why these types of memory errors exist

- Social demand to remember - people may feel pressured from the social situation to remember an event, so they may say they remember the event even though they are not sure they do
- Memory construction via imagination - imagining an event may lead people to believe that the event actually happened
- Not encouraging critical thinking about memory - if people’s memories are simply accepted as reported, then the people are not likely to consider the possibility that the event did not occur

Are autobiographical memories true?

- Autobiographical memories may be accurate without being literal
- Autobiographical memories may represent personal meaning of an event at the expense of accuracy
- Accuracy of personal memories (Field, 1981):
  - .88 correlation for factual information among family members
From how early on can we remember?

- Nobody knows but 3-4 seems to be the earliest memory for most
- Infantile amnesia
- Why?

Emotion and memory

- Today: General link between emotion and cognition…some interesting emotion based effects
  - Weapon focus
  - The nude effect
  - Repression

Emotion and cognition

- Received little attention until the 1970s
- In studying how emotion influences cognition, psychologists would like to manipulate people's emotions, so that any results cannot explained by a factor that was not controlled for.
- This turns out to be an incredibly difficult task given that it’s impossible to elicit an identical degree of emotion across experiments and participants
- How is emotion manipulated?: writing about a past experience, seeing part of a film, listening to music, reading cards with emotion words and imagining feeling that emotion
- We don’t know if our manipulations actually affect subject emotion equally or at all
- Big example: I Am Sam

Five theories of how emotion influences cognition

- Note: Emotion/mood may be used interchangeably
- Most of these theories aren’t competing…all of them could be right

5 theories of how emotion and cognition interact to influence memory

1) Network theory (Bower, 1991)
   - An extension of semantic networks with a series of “mood/emotion” nodes which interact with other nodes
   - Emotions can be linked to concepts in the network
Evidence for network theory

- Mood dependent memory: information better recalled when encoding mood and retrieval mood match…could be due to spreading activation
- Depressed individuals find it difficult to break out of depression because they continually think depressing thoughts…again, could be due to spreading activation

2) Mood consistent schemas
- similar to the network idea except that certain moods cue the use of mood consistent schemas which may be invoked later if mood is reinstated
- Schema would summarize feelings/thoughts usually experienced when in a certain mood
- Problem: assumes that multiple schemas can be simultaneously activated (one for internal state, one for external context)

3) Mood occupies mental capacity (cognitive resource theory, Ellis & Ashbrook)
- less capacity remains for cognitive tasks such as memorizing information (e.g. Ellis et al., 1989)
  - Mood may either alter capacity or lead to task-irrelevant thoughts
  - Ellis, Thomas, & Rodriguez (1989) – depressed and control subjects perform equally on a memory task requiring little effort but depressed < controls on a task requiring high effort
  - Sad people also perform less well than neutral controls
  - Also Ellis et al. (1985) & Weingartner et al. (1981)

4) Cognitive initiative theory
- performance deficits when depressed occur because person are less likely to initiate action when depressed vs. not depressed.
- If depressed people are forced to process the information (e.g. rehearse out loud), then their performance is similar to non-depressed people

An opposing view

- Emotions as signals for processing that is required (Frijda, 1988)
  - Emotions inform us about the state of the world and whether action is necessary
  - Positive = everything is okay = no action; Negative = something wrong so action required
  - Gaining momentum as a theory because there are clear predictions
  - Cognitive tuning: cognitive processing is cued by the present affective state (Levine & Burgess)

Levine & Burgess

- Happiness leads people to focus attention broadly, non-happiness leads people to focus narrowly or specifically
- Anger involves planning or desire to remove obstacles to obtain a goal (focus on obstacles)
- Sadness involves the realization that goal achievement is impossible (focus on unattainable goals and changing goals accordingly)
Levine & Burgess

• Manipulation: Grade assignment “A” or “D”
• Following grade assignment, a narrative is read and then memory for the narrative is tested
  – Happy people recall more overall than non-happy people (the happier you are, the more you recall)
  – Sadness led to better recall about outcomes
  – Anger led to better recall about goals (the angrier you are, the more about goals you remember)

Problems

• Effect of emotion on cognition is inconsistently demonstrated, many failed studies (ineffective manipulations or not genuine effects?)
• Best message: Some arousal ideal for remembering, but not too much either way
• So instead, let’s talk about specific emotion effects!

Specific emotion effects

• Weapon-focus
• “Nudes”
• Repression

Weapon focus

• a witness will “zoom-in” on some critical detail, such as a weapon, to the exclusion of other things in the scene.
• Burke, Heuer, & Reisberg (1992)
  – Emotionally bland vs. emotionally arousing narrative accompanies slide show of a crime
  – Emotionally aroused subject show better later recall for details “central” to the story relative to emotionally bland, but emotionally bland show better later recall for peripheral/background details relative to emotionally aroused
  – Emotionally bland subjects had better “overall” recall, suggesting that emotion affected memory by “zooming in on a specific detail of the episode

“Nudes”

• Presenting “unexpected” nude pictures during a memory experiment
• Ellis et al. (1971)
  – Subjects presented a series of black & white line drawings for a later memory test
  – Half way through, a black and white nude photo is presented for half of all subjects
Ellis et al. (1971)

- Suggest the high memory for “nude” and poor memory for subsequent pictures is due to emotion (narrowing of attention to emotional event)
- Criticisms
  - Picture vs. line-drawing
  - Objects vs. person
  - Distinctiveness vs. emotion

Schmidt (2002)

- Experiment 1 addresses first two criticisms
  - All pictures of clothed people with a naked person thrown in
- Experiment 2 addresses final criticism
  - All pictures of nude people with a clothed person thrown in

Clothed amongst nude

- General pattern looks the same on first glance but
  - Memory for clothed individual is not 100%
  - Memory for 2-3 pictures that follow is unaffected (no narrowing of attention due to arousal)

Repression

- Freud (who else?)
- Considered repression to be a major aspect of normal forgetting
- Freud or fraud (a brief look at the writings of Frederick Crews)...suggests Freud purposefully planted memories in patients to further his theory
- Today: renewed interest in experimental study of repression
Repression

- For many years, Freud’s ideas were accepted but untested... then the recovered memory debate of the 1980s and 1990s led to a number of studies on the issue

- Many of these studies led to the conclusion that repressed/recovered memories were common

Briere & Conte (1993)

- 450 adult clinical clients who reported sexual abuse histories
- "between the time of the first forced sexual experience and 18th birthday, was there ever a time that you could not remember it?"
- Results: 59% said yes
- Amnesia was more likely to be reported by subjects who:
  - suffered early molestation onset
  - longer abuse
  - greater present symptomatology

Problems with Briere & Conte (1993)

- All subjects were in therapy at the time
- Multiple interpretations of responses (forgot vs. repressed, subjective questioning)
- Is anything ever not forgotten for at least short periods of time (for most people, the same thing doesn’t flow through conscious memory in a nonstop manner)

Studies of repression

- Many of these are flawed for a variety of reasons
- Major move towards questioning the validity of studies and defining repression
- Major character here: Holmes

Holmes (1990)

- Repression has 3 main elements:
  - Selective forgetting of materials that cause pain
  - not under voluntary control
  - material is not lost but stored in unconscious and can be returned to conscious if anxiety associated with the memory is removed
- As yet to see any laboratory evidence of repression (conclusion culled from 60 years worth of research)... the newer studies on repression ask people to intentionally repress material, which violates the outlined elements

Holmes (1990) problems with repression

- While pleasant > unpleasant (first evidence for repression), intensely emotional > emotionally unintense
- Experimental evidence that decreased recall following stress is due to interference (interfering thoughts) rather than repression
Mistaken beliefs about repression

- Poor memory for childhood events is diagnostic of sexual abuse
- Therapists try to supplant false memories of childhood abuse in their patients (most therapists do believe in repression it seems, and are likely well intentioned…)
- Recovered memories are common

Garry, Loftus, Brown, & Dubreuil (1996)

- What does the general public think about repression
- Subjects answered questions measuring beliefs about general memory functions, traumatic
- 64% of subjects believed events are permanently stored in the brain
- 67% agreed that forgetting means an inability to locate stored information
- 40% agreed that details of traumatic events were preserved (Note that a belief in permanent and accurate traumatic memory storage is also needed to build a repression mechanism)

- 57% believed that 'spotty/fuzzy' memories often signal trauma
- 16% believed special therapeutic techniques can be used to remember prenatal events

- Is any of this supported in the literature?
- If high arousal leads to poor memory, can we assume that extremely emotional events are held literally in memory?
- If repression is possible, why does PTSD exist?
- A possible link to repression: psychogenic amnesia (forgetting events from one’s own life, brought on by stress)