

Special topics in memory research

Lesson V: Long-Term Memory module 26





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Areas of special interest in memory research

Autobiographical memory

- Remembering information about our own past
- Mnemonists
 - Outstanding memory abilities and
 - Memory strategies
- Eye-witness testimony
 - Reliance on fallible human memory in the courtroom
 - How can we validate human memories?
- Flashbulb memories & context dependence
 - Are some memories special emotional context
 - Role of other contextual features



Autobiographical memories

- Amount varies by experienced age
 - Characteristic function of autobiographical memories with best recall for things that happened in young adulthood (Rubin, 1982)
- Empirical results (recent internet study)
 - Participants were given 10 "cue" words and had to provide personal memories related to the words
 - Participants had to date the memories
 - Similarly, participants were asked about their memories for news items over a large range of time



Reminiscence bump during adolescence

• Distribution of memories over the life-span



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Autobiographical memories

- General principles
 - A lot of information is remembered and even more information is forgotten
 - Individual experiences follow cultural patterns
 - Rehearsal of memories through social situations (e.g., storytelling) might determine the amount and accuracy of remembered information
- Some other empirical approaches
 - Diary studies of individual researchers
 - Longitudinal studies with small groups



Outstanding memories

Mnemonists

- Person with extrordinary memory ability
- Luria's "Mind of a Mnemonist" (1968 Engl. edition)
- The story of a mnemonist
 - S. was able to remember long lists of numbers, words, verbatim text passages
 - Use of visual imagery to remember abstract material
 - Effects of synaesthesia
- Other "mnemonists"
 - Trained individuals (see mnemonic strategies)
 - Savant skills are often accompanied by extraordinary memories in narrow areas (e.g., autism)



Memory strategies

Mnemonics

- The art and science of memory strategies
- Some mnemonic techniques
 - The basic idea behind most of these techniques is to provide additional cues for recall by either grouping (categorizing) items that then will prime each other, or to enhance memory by using visualization techniques which use multiple-codes (e.g., visual and verbal) for memory retrieval
 - Categorical clustering
 - Visual imagery, interactive images
 - Pegword systems
 - Method of loci



Accuracy of memory and memory distortions

Memories are "flexible"

- Memories are constructed to fit expectations
- Memories are influenced by suggestion
- Memories can be planted
- Eye-witness testimony problem
 - How can one evaluate an eye-witness's statement given the potential fallibility of memory? (e.g., Elizabeth Loftus research)
 - What do witnesses attend to: weapon focus
 - Children as witnesses



Planting childhood memory

- How accurate are autobiographical memories?
 - Elizabeth Loftus (formerly at the UW) investigated whether memories can be planted
 - "Lost-in-the-mall" study
 - "Hugging-Bugs-Bunny" study
 - "Your hot-air balloon trip" study







- Is there a way to assess the accuracy of eyewitness testimony?
- Identifying a perpetrator from a line-up (Dunning & Perretta, 2002)
 - Analyses of identification times indicate, that fast identifications (< 10-12 seconds) are more accurate than slow identification times
 - < 12 seconds = 90% correct
 - > 12 seconds = 50% correct
 - Automatic processing vs. process-of-elimination
 - Perceptual fluency vs. cognitive analysis



The role of context

- Context dependent memories
 - Physical, social, or emotional context of learning can provide a retrieval cue for memories
 - Diver-study: Location of learning (above water or under water) led to slightly better memory performance if the test was done in same situation
 - Noise level during learning (e.g., listening to music) can also influence memory performance (e.g., exam)
 - These context effects appear to be rather weak
- Flashbulb memories
 - Strongly emotional events (e.g., catastrophes) might lead to a different encoding of memories
 - Little evidence for "special" status of these memories
 - Events might be recalled and re-lived more often

