

1  **Psychology 105**
Dr. Gordon

Module #27

“Forgetting And Reconstructive Memory”

2  **A. Theories of forgetting**

- **1. Introduction to forgetting theory**
- **2. Encoding failure theory**
- **3. Storage decay theory**
- **4. Retrieval failure (Interference)**
- **5. Motivated forgetting theory**

3  **1. Introduction to forgetting**

- *In the cartoon above, Peppermint Patty endures her memory failure. Myers argues that it is blessing to remember and forget. In terms of the latter, forgetting is a blessing if we have so much useless information in our heads. The mind “clutter” contributes to our memory failure. Memory failure is a common experience. Daniel Schacter identifies seven ways our memories fail us. Myers lists them in module #27.*

4  **1. Introduction to forgetting**

- *Cited in Myers, Daniel Schacter identifies seven ways our memories fail us. These include the 3 sins of forgetting.*
- *1. Absent-mindedness (inattention to details produces encoding failure).*
- *2. Transience (storage decay, unused information fades).*
- *3. Blocking (inaccessibility of stored information)*

5  **1. Introduction to forgetting**

- *Cited in Myers, Daniel Schacter identifies seven ways our memories fail us. These include the 3 sins of distortion.*
- *4. Misattribution (confusing the source of information).*
- *5. Suggestibility (lingering effects of misinformation)*
- *6. Bias (belief-colored recollections).*

6  **1. Introduction to forgetting**

- *Cited in Myers, Daniel Schacter identifies seven ways our memories fail us. These include the one sin of intrusion.*
- *7. Persistence (unwanted memories haunt us).*
- *All of these sins remind us how limited our memory processes can be. We will now examine all of these processes!*

7  **2. Encoding failure theory**

- *Encoding failure is one of many theories of forgetting. Encoding failure theory simply asserts that we cannot remember what we never encoded in the first place, a “pseudoforgetting” so to speak. Myers notes that encoding failure may be one of the primary reasons why older adults suffer from more memory breakdowns than younger persons.*

8  **3. Storage decay theory**

- *Storage decay theory of forgetting proposes that forgetting occurs because memory traces fade with time. According to this view, time is the culprit. The passage of time causes forgetting. Ebbinghaus discovered this years ago with his famous forgetting curve. Years later, Bahrick (above) found the same trend among*

students who completed a Spanish course. Students who are retested 3 years later forget a substantial amount.

9  **3. Storage decay theory**

- Though a common sense view, storage decay theory has yet to be substantiated. Most theorists believe that it is not time but rather what one does with the memory that determines whether the degree of forgetting. The curve above might look different if students lived in Spain or read Spanish magazines on consistent basis.

10  **4. Retrieval failure theory**

- Retrieval failure theory proposes that forgetting occurs because of breakdown in retrieval. Inconsistency between how we encode and retrieval cues negatively affects recall. This can be explained by the encoding specificity principle. The encoding specificity principle states that the value of a retrieval cue depends on how well it corresponds to the original memory code. Transfer appropriate processing is an example of encoding specificity. This process occurs when the initial processing of information is similar to the type of processing required by the subsequent measure of retention (Retrieve the months of the year alphabetically).

11  **5. Interference theory**

- Interference theory proposes that people forget information because of competition from other material. Studies have shown that test material that is similar to material studied during the intervening period, the greater interference and poorer the retention of test material. Two types of interference have been identified. These are proactive and retroactive interference.

12  **5. Interference theory**

- Interference theory has received reasonable empirical support. As cited in Myers, Jenkins and Dallenbach found that sleep and minimal activity after studying can have a profound positive effect on later recall of nonsense syllables (see above). They suggested that an hour before one falls asleep may be the best time for one to commit information to memory. Interference theory asserts that memories are forgotten because of competition among bits of information. If one stays awake, one is more at risk for competing information.

13  **6. Motivated forgetting theory**

- Motivated theories of forgetting suggest that we have a tendency to forget things that are too painful to think about. Sigmund Freud used the term repression to explain this common memory phenomenon. Repression refers to keeping distressing thoughts and feelings buried in one's unconscious. However, other researchers argue that repression may not exist. Instead, we might reconstruct or revise painful memories so they are less distressing.

14  **B. Memory reconstruction**

1. Misinformation effects
2. Imagination effects
3. Source amnesia
4. Discerning true and false memories
5. Children's eyewitness recall
6. Repressed or constructed memories of abuse

15  **1. Misinformation effects**

- The cartoon to the left implies that we actively construct our memories. We tend to fill in "gaps" in our memories so our lives become more meaningful.

16  **1. Misinformation effects**

- Elizabeth Loftus examined the reconstructive nature of our memory. Memory psychologists argue that we tend to infer our past from stored information. That is, people tend to recall the details of events and fill the rest in with their schemas (existing structures of knowledge such as assumptions, attitudes, biases, values,

etc...). Through her work on memory reconstruction, Loftus discovered the “misinformation effect.” The misinformation effect refers to receiving new information that in turn affects the original memory. This phenomenon occurs frequently in eyewitness testimony.

17  **1. Misinformation effects**

- Loftus identified three stages of the misinformation effect. First, subjects view the event. Second, subjects are exposed to information about the event, some of which is misleading. Third, recall is tested to see if the postevent misinformation affected their memory of the original event.

18  **1. Misinformation effects**

- Loftus put these stages to test. She showed subjects a video of a car accident. Subjects were then grilled just like in courtroom. Biased or misinformed information was then introduced to subjects. Subjects were asked two different questions: 1) how fast were the cars going when they hit each other, or 2)..... when they smashed each other?

19  **1. Misinformation effects**

- By introducing the slightest change in a question (hit versus smashed), Loftus could manipulate subjects recall of the car accident. Along these lines, which group reported that there was broken glass even though the original video did not show it?

20  **2. Imagination effects**


- The “Doonesbury” cartoon above illustrates how imagination can affect the reconstruction and later recall of events. As noted by Myers, “imagined events later seem more familiar, and familiar things seem more real.” Studies have indicated that subjects who have more active imaginations tend to score higher on false memory tests.

21  **3. Source Amnesia**


- Source amnesia refers to the process of making attributions about the origins or contexts of our memory images. A Source-monitoring error refers to a memory that is derived from one source but is misattributed to another source. You may observe this when someone has a memory of you saying something that you do not remember saying. Source amnesia and errors can also explain a phenomenon called “Cryptomnesia.”

22  **3. Source Amnesia**


- Cryptomnesia refers to an inadvertent plagiarism that occurs when people come up with an idea that they think is original when they were actually exposed to it earlier. It can lead to lawsuits as experience here by Billy Joel. In Billy Joel’s case, he was accused of stealing or plagiarizing someone else’s song ideas.

23  **4. Discerning true and false memories**


- How do we discern false and true memories? Some claim that memories from one’s actual versus imaginative experience are more detailed and thus truer to form. Along these lines, it is better to ask for details rather than the “gist” of one’s recollections to discern the degree of accuracy. The person is not always the best source to differentiate true from false memories. However, the person’s brain activity is the most effective way of ascertaining the accuracy of one’s memory. Fortunately, brain technologies have shed insight into this phenomenon.


24  **4. Discerning true and false memories**


- For the most part, brain activity cannot distinguish true from false memories. That is, false memories activate the identical brain regions as true ones. However, in one study, subjects asked to rehearse a list of words. Subjects were then asked to recall words that were or were not on the original list. Even though hippocampal areas were activated for true and false words, an active temporal lobe was able to discern the true from the false (words were not on original list) memories.


25  **4. Discerning true and false memories**


- Memory reconstruction is a susceptible process. It can be influenced by a hypnotist’s or attorney’s leading questions. From a cognitive standpoint, memory constructions are affect by one’s imagination, biases, attitudes, etc... Lastly, it is affected by one’s maturation, or simply the passage of time. As cited in Myers, George Vaillant, the renowned adult researcher, reminisces about using the historical interview to obtain data and implying the dilemma of reconstructive memory.


- 26  **4. Discerning true and false memories**
- Vaillant wrote, “It is all too common for caterpillars to become butterflies and then to maintain that in their youth they had been little butterflies. Maturation makes liars of us all.” The comparison of Theodore Kaczynski’s picture and his police sketch strongly suggest the realities of memory reconstruction and potential distortion. Is it possible that detectives or sketch artist asked leading questions? If so, would it make sense for police authorities to increase accurate recall by asking effective open ended and not leading questions. After a full description of the crime scene or suspect, detectives then can ask more “evocative follow-up questions.”


- 27  **5. Children’s eyewitness recall**
- Studies indicate that children are especially susceptible false memories. The accuracy of children’s recall depends on they are asked. If children comprehend the question in words they understand, recall accuracy increases significantly. Preschoolers are especially susceptible to leading questions and false memories. Clinicians recommend that children’s memory accuracy of abuse can be increased if involved adults have not discussed the issue with them prior to the interview.

- 28  **6. Repressed or constructed memories of abuse**
- Memory reconstruction has tremendous societal implications. For example, recovering memories of sexual abuse have increased significantly over the last 40 years. Why is this so? Traumatic memories of abuse tend to be less vivid or even inaccessible because they typically involved repeated betrayal. This is especially true if the child is three years or younger. This is not the same for life-threatening traumas like natural disasters (e.g., hurricanes).

- 29  **6. Repressed or constructed memories of abuse**
- Tom Rutherford received a one million dollar settlement in a suit against a church therapist and a Springfield Missouri, church in a false memory case. The Rutherford’s daughter, Beth, had recalled under the church counselor’s guidance, childhood memories of having been raped repeatedly by her minister father, became pregnant, and underwent a painful coat hanger abortion. Rutherford lost his job and was ostracized. After revealing he had a vasectomy when Beth was age 4 and a physical exam revealing that at age 23 she was still a virgin, the memories were shown to be false.

- 30  **6. Repressed or constructed memories of abuse**
- What do psychologists think about revealing repressed memories of abuse? Can false memories emerge because of a therapists’ power of suggestibility through hypnosis, guided imagery, dream analysis, etc...? Adults with symptoms of distress similar to those experienced by incest victims have often been counseled and encouraged to recover memories of sexual abuse in their childhood years. The problem with all of this is that people experience the same symptoms for a variety of reasons other than sexual abuse.

- 31  **6. Repressed or constructed memories of abuse**
- The slide to the left illustrates what most mental health professionals agree upon. Mental health experts need to evaluate their diagnostic skills and methods when dealing with abuse cases and possible false memories.

- 32  **6. Repressed or constructed memories of abuse**
- Elizabeth Loftus has committed her professional career on memory reconstruction. She has experimentally

implanted false memories into subjects. Loftus' findings supported a consistent finding. That is, subjects adamantly believe the false memories existed even when briefed about the fabrication. Nevertheless, Loftus has experienced memory reconstruction first hand. In her lifetime, she reconstructed and revised the memory of her mother's death and a male baby sitter's sexual abuse.