

The seven sins of memory

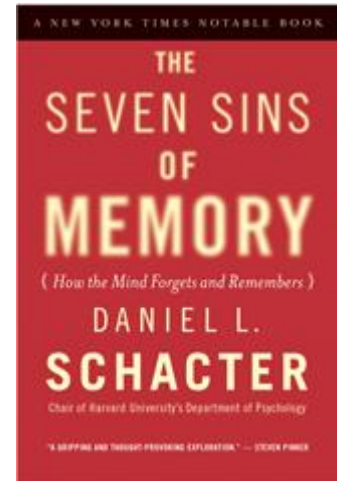
Convention award-winner Daniel Schacter explained the ways that memory tricks us.

Despite memory's obvious benefits, it can also let us down, said Daniel Schacter, PhD, longtime memory researcher and chair of Harvard University's psychology department, at an APA 2003 Annual Convention session honoring the publication of his book, "The Seven Sins of Memory: How the Mind Forgets and Remembers" (Houghton Mifflin, 2001).

"Memory, for all that it does for us every day...for all the feats that can sometimes amaze us, can also be a troublemaker," said Schacter of his book, which describes the seven major categories of memory foibles being investigated by psychologists.

However, noted Schacter, the same brain mechanisms account for memory's sins as well as its strengths, so investigating its negatives exposes its positives. "We shouldn't think of these fundamentally as flaws in the architecture of memory," he explained, "but rather as costs we pay for benefits in memory that make it work as well as it does most of the time."

At the session, during which Schacter received the APA Div. 1 (Society for General Psychology) William James Book Award, he defined his book's seven sins. The first three are "sins of omission" that involve forgetting, and the second four are "sins of commission" that involve distorted or unwanted recollections.



Three Sins of Forgetting:

- **Transience**--the decreasing accessibility of memory over time. While a degree of this is normal with aging, decay of or damage to the hippocampus and temporal lobe can cause extreme forms of it. Schacter cited as a somewhat facetious example former President Bill Clinton's "convenient lapses of memory" during the Monica Lewinsky investigation. Clinton claimed in the hearings that he sometimes couldn't remember what had happened the previous week.
- **Absent-mindedness**--lapses of attention and forgetting to do things. This sin operates both when a memory is formed (the encoding stage) and when a memory is accessed (the retrieval stage). Examples, said Schacter, are forgetting where you put your keys or glasses. He noted a particularly famous instance in which cellist Yo-Yo Ma forgot to retrieve his \$2.5 million cello from the trunk of a New York City cab.
- **Blocking**--temporary inaccessibility of stored information, such as tip-of-the-tongue syndrome. Schacter recounted the embarrassment of John Prescott, British deputy prime minister, when a reporter asked him how the government was paying for the expensive Millennium Dome. Prescott struggled to find the word "lottery," trying "raffles" instead.

Three Sins of Distortion:

- **Suggestibility**--incorporation of misinformation into memory due to leading questions, deception and other causes. Psychologists Elizabeth Loftus, PhD, and Stephen Ceci, PhD, are among those well-known in this research (see sidebar).
- **Bias**--retrospective distortions produced by current knowledge and beliefs. Psychologist Michael Ross, PhD, and others have shown that present knowledge, beliefs and feelings skew our memory for past events, said Schacter. For example, research indicates that people currently displeased with a romantic relationship tend to have a disproportionately negative take on past states of the relationship.

- **Misattribution**--attribution of memories to incorrect sources or believing that you have seen or heard something you haven't. Prominent researchers in this area include Henry L. Roediger III, PhD, and Kathleen McDermott, PhD. An illustration of it, said Schacter, is the rental shop mechanic who thought that an accomplice, known as "John Doe No. 2," had worked with Timothy McVeigh in the Oklahoma City bombing; he thought he'd seen the two of them together in his shop. In fact, the mechanic had encountered John Doe No. 2 alone on a different day.

One Sin of Intrusion:

- **Persistence**--unwanted recollections that people can't forget, such as the unrelenting, intrusive memories of post-traumatic stress disorder. An example, said Schacter, is the case of Donnie Moore of the California Angels, who threw the pitch that lost his team the 1986 American League Championship against the Boston Red Sox. Moore fixated on the bad play, said Schacter, "became a tragic prisoner of memory," and eventually committed suicide.

Schacter has focused on this last area in his own research. He's been probing the neuropsychology of why people "misremember" having seen words. His work with amnesiacs and normal participants indicates that people's normal tendency to remember "the gist of a list" of semantically similar words--a tendency missing in amnesiacs--is also what causes them to misremember words not on the list.

In his latest line of research, Schacter is using imaging to detect the brain mechanisms at work in false and correct recognition of words and shapes--work, he said, which "highlights that by using cognitive neuroscience, we can start to home in on some of the brain mechanisms involved in each of the sins."

He added, "Ultimately we think this research will help us to establish a unified view of these seven sins of memory."

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THE 7 SINS OF MEMORY

- 1. TRANSCIENCE**
The natural loss of information stored in memory over time
- 2. ABSENTMINDEDNESS**
Lack of attention in encoding/retrieval resulting in poor memory
- 3. BLOCKING**
The temporary inability to retrieve known, stored information
- 4. SOURCE MISATTRIBUTION**
The recollection of information from the wrong source that it was derived from
- 5. SUGGESTIBILITY**
The creation of false memories that alter real ones
- 6. BIAS**
Current knowledge altering memory of past experiences
- 7. PERSISTENCE**
Unwanted memories being re-experienced

Can you come up with a mnemonic device to help you remember the 7 Sins of Memory? Use this space to try and work out a mnemonic that works for you!

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