

True or False? How Do We Know?

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Innocent or guilty? A jury's finding can depend on the recollection of an eyewitness to crime, but memory is a tricky thing. In the past 20 years, the notion of false memory has moved from the psychology laboratory to the popular media. People have come to understand that it is possible to have vivid, complex memories of events that never happened.

"Our memories are not videotape recorders, but there are features in our memory that help us guard against being woefully wrong," said University of Arkansas psychologist James M. Lampinen. "Not only have psychologists been interested in how false memories are created but in how they are avoided."

Lampinen and colleague Timothy N. Odegard of the University of Texas at Arlington edited a special issue of the journal *Memory* focused on the ways in which people edit memories for inaccuracies and inconsistencies. The editors assembled researchers who are "leaders in the field of identifying and explicating the nature of the quality control mechanisms that limit false memories" to contribute to the special issue.

Research in psychology labs has established that false memories can be created in various situations, such as in word learning exercises and in eyewitness memory. Yet, while memory is subject to distortion, that is only half the story. People also use editing mechanisms to correct for distortion, making it possible to rely on memory to be reasonably accurate. Psychologists have learned that the errors in memory are errors that make sense and leave people with a more or less accurate gist of past events.

In their introductory editorial, Lampinen and Odegard called memory a construction project that uses multiple quality-control systems to evaluate the trustworthiness of evidence. There is an interplay, the authors noted, "between those mechanisms that distort memory and those mechanisms that protect memory against distortion." The quality-control systems include such considerations as the degree of detail that makes up a memory, the thoughts associated with the memory, the related emotions, the other contextual information and the kinesthetic detail.

At times false memories are so vivid in their details that it seems they must be real. In earlier research, Lampinen and colleagues have shown that people can adopt details from actual events to flesh out false memories in a way that feels real, in a process called content borrowing. "Recent experiments have produced convincing evidence of content borrowing," Lampinen said.

In addition to an overview article and an editorial, the editors contributed an article about research they conducted with Kristina N. Watkins, an undergraduate honors student. They tested a mathematical model for predicting rejection of distorted memories, known as recollection rejection, as well as the creation of vivid false memories, known as phantom recollection.

In laboratory testing, recollection rejection is operating when a person uses verbatim memory to reject a test word - "dog" - because he consciously recalls that he had studied a different word - "cat." On the other hand, memories that convey the sense and meaning of a word are called gist memories, which can sometimes produce vivid and detailed false memories and lead to erroneous recollection rejection. That is, the participant can reject "dog" because he erroneously recalls studying the word for another furry pet, such as "cat."

The laboratory experiments affirmed that recollection rejection is a complex process involving both verbatim and gist memories and demonstrated the effectiveness of the mathematical model to broaden the theoretical understanding of memory. The data, the researchers concluded, add to "the growing corpus of data demonstrating the necessity of multiple memory process to account for recognition memory performance." Further research is needed to better understand how recollection rejection operates, something the researchers noted is an important question with implications for how instructions given to children and adults can facilitate memory through use of recollection rejection.

In their overview article, Lampinen and Odegard wrote that work on memory editing is still in its infancy and that they hope the special issue of *Memory* "will inspire new empirical work and fresh insights into the nature of false memory creation, and into the mechanisms that guard against false memories."

Lampinen is an associate professor of psychology in the J. William Fulbright College of Arts and Sciences at the University of Arkansas. Odegard, assistant professor of psychology at University of Texas at Arlington, earned a doctorate in psychology from the University of Arkansas in 2004.

Source: University of Arkansas

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