

# Adults recall negative events less accurately than children

July 21 2010, By George Lowery

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(PhysOrg.com) -- Emotions -- particularly those provoked by negative events -- can cause distorted, inaccurate memories, but less often in children than in adults, according to a new Cornell study.

The findings, published online in the *Journal of Experimental Child Psychology*, contradict prevailing legal and psychological thinking and have implications for the [criminal justice system](#), report Charles Brainerd and Valerie Reyna, professors of human development and co-authors of the 2005 book "The Science of False Memory."

The researchers previously demonstrated that adults attach far more meaning to events than children do. But leading memory theories embraced by the legal system

claim that adults remember negative events better than children and have fewer [false memories](#) about them. Brainerd and Reyna's data show these theories are not accurate.

Experiments conducted at Cornell's Memory and Neuroscience Laboratory show that experiences that stimulate [negative emotions](#) are very bad for the accuracy of children's memories but even worse for adults. When an experience has negative emotional qualities, true memory levels are lowest and false memory levels are highest.

The researchers tested children, ages seven and 11, and young adults, ages 18-23, by showing them lists of closely related emotional words --

pain, cut, ouch, cry, injury -- but in each list some related words -- such as "hurt" -- were missing. When asked to recognize words from the list, respondents would mistakenly remember "hurt" as one of the words. These mistakes allowed researchers to determine the level of emotion-induced false memory at each age.

"We found something different than what leading theories of [emotional memory](#) in adults say," Brainerd said. Those theories say that "When you're involved in a very negative experience of some sort, like a crime, it focuses your mind, and you really pay attention to details.

"But our research showed that exactly the opposite is true. By manipulating the emotional content of word lists, we found that materials that had negative emotional content in fact produced the highest levels of false memory. And when you add arousal to the equation, memory was distorted more." Two experimental psychologists in China have contacted Brainerd to say that they have successfully replicated all of these results.

Brainerd and Reyna's work "shows that these leading adult theories -- namely that your memory is preferentially accurate for negative emotional experiences -- are wrong," Brainerd said. "We've been able to show that memory is most distorted in those situations."

The implications of the findings are profound for the U.S. legal system. Brainerd, who directs Cornell's psychology and law program, said forensic evidence is gathered in fewer than 10 percent of U.S. felonies, and in less than half of those can the evidence actually be used to prosecute the case.

"In the great preponderance of legal cases, the only evidence that's determinative is what people say happened," Brainerd said. "That's it. So the question of the conditions under which your memory of events is

distorted is the most fundamental question about the reliability of evidence -- because it is most of the evidence.

"One of the main reasons why people look at memory and memory distortion is the legal connection," Brainerd said. "In the law, you're dealing with events that are emotional. So the question of whether or not the emotional content of experiences that you're trying to remember screws up your memory is a really big question."

Provided by Cornell University

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