Ability to remember memories' origin not fully developed in youths

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During childhood and adolescence, children develop the ability to remember not only past events but the origin of those memories. For example, someone may remember meeting a particular person and the context in which he or she met that person. New research from Germany has found that the ability to remember the origin of memories is a relatively long process that matures during adolescence but isn't fully developed until adulthood.

The study, by researchers at Saarland University, appears in the journal *Child Development*. Its findings have implications for the legal arena in terms of the reliability of children's testimony.

Researchers studied 18 children (ages 7-8), 20 adolescents (ages 13-14), and 20 young adults (ages 20-29), asking them to complete two parts of a memory task. In the first part, participants were shown pictures on a computer screen and asked to judge how many times the pictures were repeated by pressing the "new" button for first-time presentations and the "old" button for repetitions.

In the second part, which occurred after a 10-minute break, participants were told that they'd be presented with pictures, some of which they'd seen in the first part and some of which were new. They were told to judge each item solely according to its repetition status; that is, items repeated from the first part and presented for the first time in the second part had to be judged as "new." When these items were repeated within the second part, they had to be judged as "old." Researchers also

monitored participants' brain responses throughout the two-part task by using an electroencephalogram (EEG) cap.

In this way, the study allowed researchers to analyze developmental changes in how the origins of memory are recalled (the second part of the task) independently from age differences in memories for events (the first part). In particular, the researchers measured how the youths retrieved and evaluated things remembered.

The study found few age differences in the retrieval processes involved in recognizing repeated pictures (the first part of the task), such that the brain responses of children of early elementary age were comparable to those of adolescents and adults. When it came to assessing the origins of memory, however, it found that children were immature in this area. Moreover, while adolescents and adults showed similarities, only adults showed maturity in this area. The findings suggest that the brain structures that support the recall of memory sources in children and adolescents continuously refine and mature with age.

"The study has important implications for people who take an interest in children's and adolescents' abilities to distinguish between multiple sources of memories," according to the researchers. "Parents, teachers, and those who work in the legal system should be aware that adolescents' memories are still likely to be distorted by distracting memories, for example by suggestions when giving testimony."

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