Our memory shifts into high gear when we think about raising our children, new study shows

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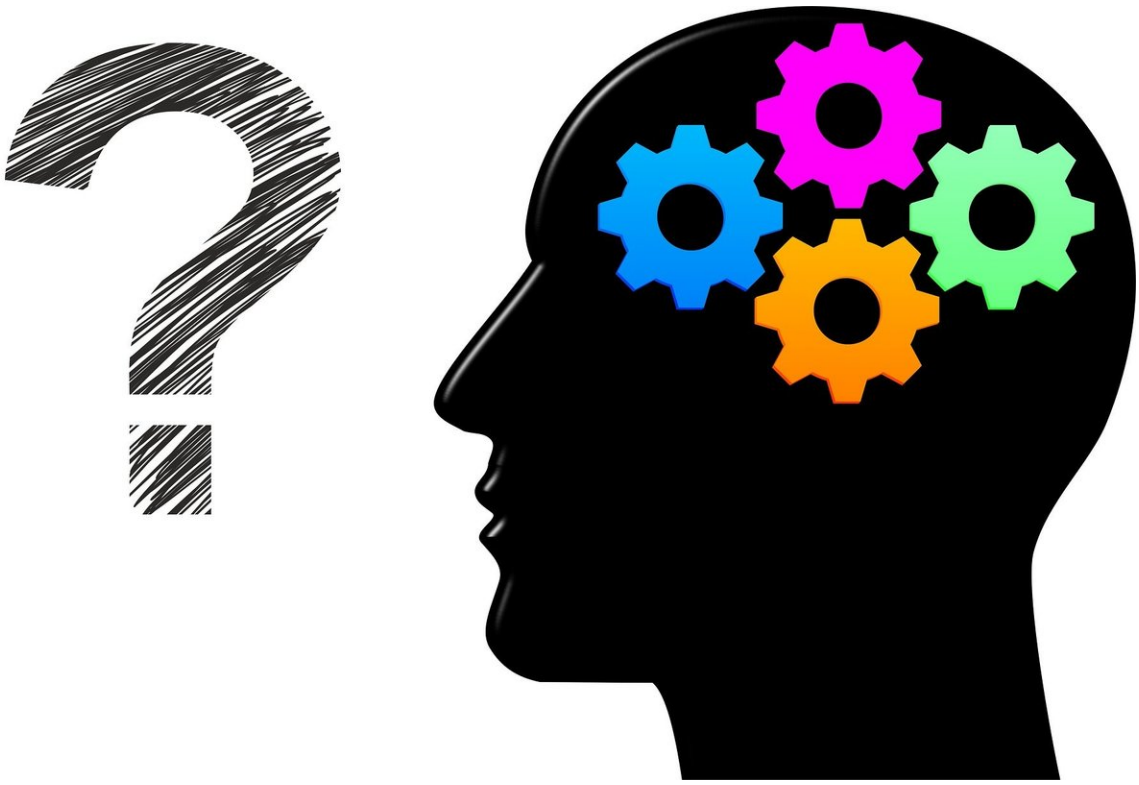

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Human memory has evolved so people better recall events encountered while they are thinking about raising their offspring, according to a new study conducted by researchers at Binghamton University, State

University of New York.

"Our ability to think and memorize information arises from our nervous systems," said Binghamton University Distinguished Professor of Psychology Ralph Miller. "As our nervous systems are a product of evolution and past experiences, one can reasonably expect that how well we memorize information today is influenced by natural selection that occurred amongst our ancestors long ago."

Miller and his students, Ben Seitz and Cody Polack, replicated a previous experiment by having research subjects rate the relevance of words (e.g. rock, apple, ball, stick) in regards to a survival scenario on the ancient grasslands of Africa, and then tested them to see which words they could recall. Subjects were able to recall more words that were rated with respect to the survival scenario than alternative scenarios that involved activities unrelated to evolutionary success. Subjects also recalled more words when faced with a scenario that involved raising children but not a scenario about seeking out a mate, despite both activities relating to evolutionary sucess. According to Miller, the failure of the mating scenario may reflect our prehistoric ancestors not realizing that mating could result in children because of the nine months between mating and birth.

Miller said that this research demonstrates that our genes not only influence our anatomy and physiology, but also the ways in which we think.

"These findings testify to the remarkable effect that specific situations thousands of years ago, situations of which we have no conscious memory, have on the functioning of our brains today," said Miller. "What is evident is that the specific functioning of our brains, like our height and hair color, is strongly influenced by genes that were selected for among our ancestors."

It is still unclear what aspects of the ancient grasslands survival and ancient child-rearing scenarios caused a more effective memory recall, but Miller and the other researchers believe it has to do with those scenarios being important to evolutionary success.

Miller is planning to further explore this idea with new scenarios, to determine the memory difference between a biological child and an adopted one as well as raising a pet dog. They expect that the biological child scenario will have the highest recall, while the pet scenario will create the lowest recall.

The paper, "Adaptive Memory: Is There a Reproduction Processing Effect?" was published recently in the *Journal of Experimental Psychology*: *Learning, Cognition and Memory*.

Provided by Binghamton University