Recalling items from memory reduces our ability to recall other related items

February 23 2012

Researchers at the universities of Granada and Jaén, Spain, have discovered why recalling some items from memory reduces our ability to recall other related items. In the field of Psychology, this phenomenon is known as "Retrieval-Induced Forgetting" (RIF), and researchers have determined the cognitive process that causes this phenomenon and its duration.

To carry out this study, the researchers designed a set of memory tasks where the participants had to learn a material and then recall it partially. Memory tasks had different levels of difficulty and included different types of materials; they were presented both to young people (university students) and to elder people (average age: 65 years).

Firstly, participants were asked to learn a list of words grouped by semantic category. Then, participants were presented a set of cues to make them name half the words from half the categories. Then, they were asked to recall all the elements learnt in the first phase. The researchers found that participants had difficulty to remember the elements that had not been practiced in the second phase and were from the same category that had half its items practiced. However, it was easier for them to remember those elements that had not been recalled in the second phase and belonged to categories that had not been practiced.

Two Questions to be Solved

The aim of this research study was to characterize the cognitive control mechanism involved in Retrieval-Induced Forgetting. While some of the properties of this phenomenon are known, there are two relevant questions unanswered: controlled nature versus automated nature of the mechanism responsible for reducing the ability to recall items, and the duration of such reduced ability.

These two questions have been answered by the University of Granada researchers, who have confirmed the adaptive nature of Retrieval-Induced Forgetting. This phenomenon is an effect of the activation of a cognitive control mechanism that is efficient even in individuals with a partial executive control deficiency. This mechanism reduces access to memory traces that might affect the recalling of target information, and its persistence relies on the type of information involved.This phenomenon is not permanent, as forgotten information can be recalled shortly when it occupies a central part of the cognitive structure of the subject.

The principal author of this study is Almudena Ortega, from the University of Granada Department of Experimental Psychology, in collaboration with professors Teresa Bajo Molina, from the University of Granada, and Carlos J. Gómez Ariza, from the University of Jaén, Spain.

The results of this research study have been partially published in *Journal of Experimental Psychology: Learning, memory and Cognition*.

Provided by University of Granada

Citation: Recalling items from memory reduces our ability to recall other related items (2012, February 23) retrieved 27 April 2024 from https://medicalxpress.com/news/2012-02-recalling-items-memory-ability-recall.html

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