



Psychology / Psychiatry Anxiety / Stress Neurology / Neuroscience

How To Forget Unwanted Memories

Written by Christian Nordqvist

Knowledge center

Published: Saturday 20 October 2012

There are two ways we can forget a memory that causes unpleasant sensations, be they a humiliating gaffe at some dinner party or an extremely frightening event, say researchers from the University of Cambridge, England, in the October 17th edition of *Neuron*.

Perhaps Freud really was onto something 100 years ago when he suggested that humans have a voluntary repression mechanism that blocks unwanted memories out of consciousness.

We all have moments in life when we encounter reminders of things we would prefer to forget about - when we see something that triggers an unwanted memory, which makes us wince briefly, and we rapidly block it out. This process is not only used for traumatic events.

The researchers of this study say their findings may lead to the development of new therapies aimed at people with disorders of memory control.

Lead author, Roland Benoit of the Medical Research Council (MRC) Cognition and Brain Sciences Unit, University of Cambridge, said:

"This study is the first demonstration of two distinct mechanisms that cause such forgetting: one by shutting down the remembering system, and the other by facilitating the remembering system to occupy awareness with a substitute memory."

According to prior studies, **it is possible for people to deliberately block memories from consciousness**. A number of neuroimaging studies have observed which brain systems are involved in deliberate forgetting; however, none have demonstrated which cognitive tactics are used, or what exactly is going on at neural level.

There are two ways we can forget unwanted memories:

- We can suppress them
- We can substitute them with another memory

How we go about forgetting in those two ways may involve different neural pathways, the authors believe.

Roland Benoit and Michael Anderson set out to test how we suppress or substitute memories. They used fMRI (functional magnetic resonance imaging) to observe the brain activity of participants who had learned associations between pairs of words, and then tried to forget the memories by either recalling alternative ones to substitute them, or blocking them out.

Both strategies are equally effective, the authors explained. However, the neural circuits that are activated are distinct.

- **Memory suppression** - activity in the hippocampus was inhibited by the dorsolateral prefrontal cortex. The hippocampus is a region in the brain which is critical for remembering past events.
- **Substituting memories** - was supported by the caudal prefrontal cortex and midventrolateral prefrontal cortex. These two brain areas play a key role in bringing specific memories into our conscious mind in the presence of distracting memories.

In a Summary in the same journal, the authors concluded: "These findings suggest that we are not at the mercy of passive forgetting; rather, our memories can be shaped by two opposite mechanisms of mnemonic control."

Benoit said:

"A better understanding of these mechanisms and how they break down may ultimately help understanding disorders that are characterized by a deficient regulation of memories, such as [posttraumatic stress disorder](#). Knowing that distinct processes contribute to forgetting may be helpful, because people may naturally be better at one approach or the other."

In 2004, researchers from the University of Oregon and Stanford University [carried out a similar study on how we forget unwanted memories](#). The volunteers learned pairs of words and were asked to think of, for example, the second word, and were observed using fMRI.

Written by Christian Nordqvist

References

"Opposing Mechanisms Support the Voluntary Forgetting of Unwanted Memories"

Roland G. Benoit and Michael C. Anderson

Neuron, Volume 76, Issue 2, 450-460, 18 October 2012. DOI:10.1016/j.neuron.2012.07.025

Additional information

Visit our [Psychology / Psychiatry](#) category page for the latest news on this subject, or [sign up to our newsletter](#) to receive the latest updates on Psychology / Psychiatry.

All references are available in the **References** tab.

Citations

Please use one of the following formats to cite this article in your essay, paper or report:

MLA

Nordqvist, Christian. "How To Forget Unwanted Memories." *Medical News Today*. MediLexicon, Intl., 20 Oct. 2012. Web. 20 Apr. 2016. <<http://www.medicalnewstoday.com/articles/251655.php>>

APA

Nordqvist, C. (2012, October 20). "How To Forget Unwanted Memories." *Medical News Today*. Retrieved from <http://www.medicalnewstoday.com/articles/251655.php>.

Please note: If no author information is provided, the source is cited instead.

This page was printed from: <http://www.medicalnewstoday.com/articles/251655.php>

Visit **www.medicalnewstoday.com** for medical news and health news headlines posted throughout the day, every day.

© 2004-2016 All rights reserved. MNT is the registered trade mark of MediLexicon International Limited.