

## Back Page: Never Fear?

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*It may sound like he's inducing amnesia, but psychology professor Tom Beckers is actually testing the possibility of targeting and muffling psychologically crippling memories.*

**What specifically led to your scientific interest in fear-provoking memories?**

I have always been interested in basic issues of learning and memory —what we take away from important moments in our lives shapes our sense of self and how we deal with future situations. While our ability to vividly remember past events with great emotional impact is vital to successful living and well-being, such memories can occasionally cause considerable suffering and contribute to depression, anxiety, or other psychological problems. Think for instance of posttraumatic stress disorder, where the sight or sound of a stimulus that is associated with a traumatic incident can trigger massive memory retrieval and reliving of the traumatic experience.

**Tell us about the objectives of the WipeOutFear project that you're heading up.**

Findings from lab experiments suggest it may be possible to make people selectively forget aspects of past events that they previously remembered, through behavioral interventions or the administration of specific pharmacological agents after targeted memory retrieval (so-called reconsolidation interference).

However, the translation of targeted forgetting from the lab to the clinic has met with limited success, partly because we don't fully understand the mechanisms and conditions governing such reconsolidation interference. In the WipeOutFear project, we are trying to dissect the nature of pharmacologically induced amnesia, through research in humans and rodents, in order to identify barriers to clinical translation and their possible solutions, all the while separating facts from fiction and promise from hype.

Learn about the WipeOutFear project at [kuleuven.be/english/research/EU/p/horizon2020/es/erc/wipeoutfear](https://kuleuven.be/english/research/EU/p/horizon2020/es/erc/wipeoutfear).

### **What findings has the project yielded thus far?**

One thing we have found is that targeted memory suppression is not always readily replicated, even when sticking closely to protocols of previous successful demonstrations. Overall, it turns out that memory representations may not be that readily malleable. When a memory is retrieved, it seems that only if there are signals present that indicate that the memory is not entirely accurate does its representation become malleable and sensitive to suppression.

Other findings from the project suggest that these amnestic interventions don't permanently "erase" a memory representation. Rather, these targeted memory-suppression techniques seem to make memory representations harder to access.

### **What are some potential real-world implications for fear suppression?**

One upshot of our findings is that the results of these types of amnestic interventions are less drastic than often proclaimed, given that they seem to suppress rather than erase memory. This reduces a number of ethical concerns regarding their clinical application. On the other hand, it is clear that our understanding of the mechanisms that govern such amnesia is far too limited to allow solid clinical translation for now. Unfortunately, our limited understanding of these and related issues hasn't stopped some people from marketing the principle of reconsolidation interference and making bold claims regarding its effectivity.

### **Are there any fears of your own that you'd like to suppress?**

I'm not particularly fearful myself. I do have plenty of memories of unpleasant and troublesome events, as does anyone who has been on this planet for long enough. But those memories are an integral part of who I am, and while thinking back to those events may make me sad at times, just like others can make me very happy, I'd rather hold on to them — they do not hold me back or impair me in my day-to-day life. After all, as I said, memory (even for negative events) mostly serves us well.

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