



STORM FRONT Benjamin Storm of UCSC's Psychology department keeps up with the latest breakthroughs in our understanding of memory.

think now, and that we believe now," and when we remember our past we tend to color them based on what we

Forgetting to Remember

The misunderstood ways that memory really works

BY MARIA GRUSAUSKAS

When I was about four years old I had a play date at Meryl Streep's house. It was just an informal kind of a thing where my dad, who built sculptures designed by Streep's husband, Don Gummer, dumped me off at the front door and picked me up a few hours later.

I remember very little: getting lost in a maze of hallways, losing my velcro-fastened shoes and hanging out with the Gummer girls in a large bathroom, where they seemed to do a lot of their hanging out.

It was a recent article in *The New York Times* about one of those sisters, the now-28-year-old Marnie, that jarred my tattered memory of her parading around in a white gown, and ordering the younger ones to follow her lead. I remember discarded garments on

checkered floors, shiny blond hair and a spiral staircase, all of which seemed incredibly glamorous at the time, and quite surreal two decades later.

It led me to ponder the recollection of memories: was the bathroom floor actually checked? And if the brain records every stimuli, then why is only a small portion encoded as memory? Can further details be unlocked from those cherished memories in the vault of our psyches? And if not, how do we maximize the capacity of our memories?

I took these questions to Benjamin Storm, Ph.D., a UC Santa Cruz professor of Psychology, and an expert on memory and cognition. Storm delivered the axe to my false notion that the brain is like a recording device, documenting every single stimuli that filters through the wrinkles of the mysterious organ.

"That's just not the way it works," he says. "From perception all the way to memory, it's a constructive process. So, the way our brain is built is so that we are pulling information in and then constructing reality from it. And then as you're remembering, you're also reconstructing earlier constructions."

This reveals a startling truth: there is no ultimately "true" memory, but rather recreations of what we think happened. This also explains why memories from childhood often take on more of a dreamlike quality.

"Over time we're remembering our prior remembrings, and then we imagine more, and then we fill in gaps and the memory changes over time. So one reason why our memories of early childhood may seem surreal is because they're remembrings of remembrings that are reconstructed..."

But the fact that our memories can be highly inaccurate reflections of reality shouldn't matter, says Storm. "Because they're still the memories we are using to define us now," he says.

And though we can't just flip a switch and remember everything exactly as it happened (there is substantial evidence that, especially in hypnosis, false memories can be constructed), cues are effective in stimulating memories: smells, music from a specific time and revisiting the site almost always bring memories, whether traumatic or happy, to the surface.

Like anything else, improving memory performance can come with practice. Rehearsing and retrieving information, keeping diaries and talking about the past helps maintain the memory.

Another, more obvious thing helps, as well: "Just stay healthy," says Storm. "Exercise, healthy diet and sleep are probably the three most important things that you can do to help preserve your memory, especially as you age."

Staying intellectually engaged is vital too, as the brain appears to be functionally unlimited. "So the more knowledge we have, the easier it is to encode new knowledge," says Storm. Storm's latest research also suggests that it's okay to let some things go. In fact, it's necessary to keep our memories sharp.

"We tend to think of forgetting as something bad [or] a failure of memory. But more and more, we're seeing that it's a sign that it's working well, that we need to forget in order to better remember what's important," he says. "We need to have certain information become inaccessible... we're seeing the memory system is designed in such a way that allows us to forget. And if we weren't able to forget, we would probably be worse off."

Health Tip

"Remembering is a great invention of the mind...if you try hard enough you can remember anything, whether it really happened or not" (FIM, 2)

① How does memory not work?
② How does memory really work?

③ Is there really a "true" memory? Why?

④ Describe ways to improve memory performance.

• Restate questions in complete sentence answers.
Answer in blue or black ink.