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## The Memory Professor: With a \$600,000 grant, Jennifer Coane continues to probe what we remember and why

Jenny Chen

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# THE MEMORY PROFESSOR

By Jenny Chen '12

With a \$600,000 grant, Jennifer Coane continues to probe what we remember and why

Assistant Professor of Psychology Jennifer Coane is an expert in the science of memory, studying how we construct false memories, how memory changes as we age, and how to apply cognitive psychology to study techniques. In August 2015 she received a multiyear \$600,000 grant from the James S. McDonnell Foundation for her work in understanding human cognition—a prestigious award the foundation typically gives to scientists at large research universities.

At Colby Coane will study how we integrate knowledge and words into semantic memory—the knowledge that's accessible without context and instantly connected to related information.

The words *castanet* and *Casablanca* were examples in her grant application, and it's estimated that the average adult has 50,000 of these entries stored up.

Coane first became interested in memory as an undergraduate at Illinois State University. She remembers wandering into a memory lab where students were working with word lists and inducing false memories. In 1995 researchers Henry L. Roediger and Kathleen McDermott popularized a false-memory experiment where participants are given a list of words: bed, rest, awake, tired, dream, wake, snooze, blanket, doze, slumber, snore, nap, peace, yawn, drowsy. Then they are asked to remember as many words from the list as possible. About half recall a word that wasn't on the list but is related—like sleep. This research drew widespread attention because of its implications for testimony in sexual assault cases and in eyewitness accounts during court trials.

Coane delved into the subject at Illinois, where she earned her master's degree, and explored semantic memory in her doctoral work at Washington University in St. Louis.

At Colby Coane does more than reference her research in the classroom; she puts it to use. In the first 15 minutes she asks students to explain the topics they covered in the previous class. This, Coane says, engages them in a process called "active retrieval," which has been proven to strengthen recall of a learned fact or concept.

She quizzes students at the end of each class to help them stay on track with the reading and also to challenge them to retrieve information soon after committing it to memory. "Her Cognitive Psychology class is one of the best classes I've ever taken," said Kim Bourne '16. With the memory techniques, "I really didn't even have to study for the final."

Coane's passion is often passed on to her students. Kate MacNamee '14, now in graduate school, is continuing research she started with Coane on word aversion (why some people hate the word *moist*, for example).

Chelsea Stillman '10 earned her Ph.D. at Georgetown in lifespan cognitive neuroscience and is doing a postdoctoral fellowship at the University of Pittsburgh Medical Center, looking at ways to improve memory and learning through lifestyle changes. A paper Stillman and Coane coauthored about how processing information for survival affected memory was named "paper of the month" by the journal *Memory and Cognition*.

The 2014 paper centered on research that asked whether older adults remember information better when it is processed for its survival relevance (linked hypothetically to surviving in the wild or moving to a foreign country, for example), as has been determined to be true with younger adults. The conclusion: the survival processing does not provide the same recall benefit to elders.

For Stillman, work with Coane paved the way for serious scholarly research and publication. "When we started doing poster presentations, I was amazed by how some of the other grad students hadn't had the experience in the lab and writing and presenting that I did," Stillman said. "I didn't realize how much I got out of the experience until I left."

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