

?Unrelated Events Are Linked in Memory When They Happen Close Together

December 17, 2018



When two events occur within a brief window of time they become linked in memory, such that calling forth memory of one helps retrieve memory for the other event, according to [research published in *Psychological Science*](#), a journal of the [Association for Psychological Science](#). This happens even when temporal proximity is the only feature that the two events share.

“Our research shows that people are constantly recording information about the order in which events happen, even if those events are unrelated. They can then use the order to help search memory,” explains psychological scientist M. Karl Healey of Michigan State University.

Memory scientists have long been interested in determining whether temporal proximity acts as a tether of sorts that connects memories for different events. In most studies, researchers have tried to examine the phenomenon by asking people to memorize lists of words in the lab, but it is unclear how well this lab-based approach translates to memory for real-world events.

“In the fall of 2016, I was obsessing over US election coverage and it occurred to me that many other

people probably were, too. This provided the opportunity for a more naturalistic test—we could ask people to remember news stories rather than word lists,” Healey explains.

In one online study, Healey and coauthor Mitchell G. Uitvlugt collected and analyzed data following Election Day in 2016. The study participants had 7 minutes to recall as many election-related news stories as they could – for each story, they also drafted a short newspaper-style headline.

Healey and Uitvlugt identified actual news stories that corresponded with the headlines generated by the participants, noting the date that the stories appeared. For their analyses, the researchers did not include stories that were not associated with specific election-related events. This process yielded 7,759 headlines from 855 participants.

The researchers then calculated a lag score that measured the transition, in days, from one headline in a participant’s story sequence to the next.

The results showed that participants tended to recall stories in time-based clusters: Short transitions between stories (0 to 10 days) were much more common than would be expected according to chance. Furthermore, long transitions of more than 50 days were less frequent than one would expect by chance. The analyses showed that what participants remembered wasn’t due to news events naturally clustering close together in time but rather the clustering of stories together in memory.

This pattern held even after the researchers accounted for similarity between events. And a second online study, in which a separate group of 561 participants recalled news stories from the previous 4 months, showed similar results.

“I was surprised at how well these real-world data agreed with lab data,” says Healey. “Although remembering world events you’ve read about over the course of months seems different than memorizing a list of random words presented over the course of minutes, at a fundamental level it seems both are governed by the same principles.”

Uitvlugt and Healey point out that the participants could not have prepared for the memory task, which rules out the possibility that participants used specific strategies when the events occurred to aid subsequent recall. Instead, the findings suggest that our memories are tagged with time-correlated information as we encode them, and that this information can be used when we search memory later on.

“This research tells us something about memory in general. It suggests we all have a tendency to bind events together in memory when they occur near together in time,” Healey says.

All data have been made available at the [Computational Basis of Cognitive Control Lab website](#).