

# How Do I Remember That I Know You Know That I Know?

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“I’ll meet you at the place near the thing where we went that time,” says the character Aaron in the 1987 movie *Broadcast News*. He and the woman he’s talking to have a lot of common ground, the shared territory that makes conversations work. Common ground is why, after you’ve mentioned Great-Aunt Mildred’s 80<sup>th</sup> birthday party once in a conversation, you can just refer to it as “the party.” In a new study to be published in an upcoming issue of *Psychological Science*, a journal of the Association for Psychological Science, the authors pinpoint the type of memory required to make common ground work and confirm that people with a particular type of amnesia have trouble making common ground in conversation.

People with declarative memory impairment (amnesia) have good memories of what happened before their amnesia started, but they can’t form new declarative memories. That’s the kind of memory for facts and events, like what they did yesterday or the name of a person they just met. They can still form non-declarative memories, like learning how to ride a bike or other skills, says Rachael Rubin of the University of Illinois. For this study, she worked with five people with declarative memory amnesia and five healthy people. Rubin cowrote the new paper with Sarah Brown-Schmidt and Neal Cohen of the University of Illinois and Melissa Duff and Daniel Tranel of the University of Iowa.

Rubin and her colleagues tested people on whether they could keep up with common ground in conversation. In one condition, the participant and experimenter sat facing each other, looking at back-to-back monitors. Each monitor showed a 3×3 grid, which looked like a real set of cubbyholes between the two people, with objects in each compartment. The participant could see right through the top row of compartments. The middle row was blocked off, and the bottom row was blocked at the back so the participant could see what was in the compartments but the experimenter couldn’t. The experimenter asked the participant: “What object is in the bottom left?” The participant would answer – “an elephant.” After 40 seconds of conversation about something else, the experimenter would say, “Look at the elephant.” The catch was, the participant had two elephants to choose from. Normal people looked to the elephant that had been referred to just previously. But people with amnesia looked equally at the two elephants, showing no benefit from the earlier portion of the conversation.

This suggests that declarative memory is required for keeping track of what’s going on in a conversation, even if it was something that was mentioned less than a minute ago. “Memory and language are related more than people thought before,” Rubin says. And it’s a reminder that people with amnesia don’t just have trouble with memory; their memory problems extend to other parts of their lives, like the ability to connect with other people through conversation.