

Individuals can tell if their memories are trustworthy, new study shows

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How much trust should we put in our memories? New research shows we have a good awareness of when we are recalling events accurately—and when our brain is filling in gaps with general

knowledge.

Memories are a blend of recalled details and "prototypical" information, but a study at the University of Birmingham has shown that when prototypes appear more prominent, we become less confident in the recollection.

This means that we are able to distinguish between these two types of memory, and accurately assess how reliable our memories are. The results are published in *Communications Psychology*.

"We rely on our memories, particularly when they are of a one-off event, for example a birthday dinner," explained lead author Dr. Ben Griffiths. "But events that occur regularly, such as your commute to work, are streamlined by the brain to only retain the unique elements—some roadworks, perhaps, or a near-miss. The rest of the details are filled in from pre-existing knowledge.

"We wanted to find out well people were able to recognize these generic or 'prototypical' memories, and how far they were able to trust their recollections."

In the study, just over 200 participants completed a series of experiments in which they were asked to look at objects in different "non-matching" colors. For example a blue apple. After completing a simple math task as a distraction, they were asked to remember the color and then pick it out from a color bar to test how precisely they were able to recall the shade.

Finally, they were asked to rate how confident they were of the accuracy of their answer by selecting from "sure," "unsure," or "guess."

The group used unsupervised machine learning to pick out patterns from

the responses. This enabled the researchers to spot the generic, or "prototypical" shades that people tended to opt for when they were unsure of their accurate recollection of the color.

The results showed that participants' confidence in their color selections tended to decline when the colors were closer to shades identified as prototypical by the machine learning algorithm. This suggests that we are aware of the likely degree to which prototypes are filling in gaps in our [memory](#) and can factor in that knowledge when we are asked to assess the accuracy of our recollection.

The findings have implications for eyewitness accounts in legal cases, where confidence in the accuracy of recollection is key.

Dr. Griffiths added, "When it comes to [facial recognition](#), we know that people struggle to distinguish accurate memories from prototypes. We know less about how recollection of events can also be biased, but that is equally important when making decisions about how much to trust an individual's recollection.

"Our research shows that people are actually quite good at knowing when their accounts are reliable and when they are influenced by their brain filling in gaps with generic information."

More information: Metacognitive awareness of memory distortion during recall, *Communications Psychology* (2024). [DOI: 10.1038/s44271-024-00108-2](https://doi.org/10.1038/s44271-024-00108-2)

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