

# Do monkeys know when they need to 'Google it'?

July 8 2016, by Bill Hathaway

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Credit: Alyssa Arre

Are humans the only animal that knows what they don't know? A new study by researchers at Yale and Harvard shows that rhesus monkeys also spontaneously recognize when they are ignorant and need to seek out more information.

"Metacognition—the ability to think about our own thoughts— has long been considered a hallmark of being human," said Laurie Santos, Yale psychologist and senior author of the study published online July 7 in the journal *Psychological Science*. "We all know the difference between feeling like we know something for sure and feeling like we're not all that certain. We know when we need to Google something."

But do other animals recognize their own uncertainty? Previous studies have shown that animals can recognize when they are uncertain, but the animals had a period of exposure to the experimental problem.

"But that is different from what we see in humans," said Alexandra Rosati, an [evolutionary biologist](#) at Harvard and lead author of the study. "We wanted to know if [monkeys](#) could engage in metacognition on the spot when confronted with a brand-new problem."

Rosati and Santos came up with an ingenious way to test whether free-ranging rhesus monkeys spontaneously know when they need more information. They gave monkeys a chance to search for food placed into one of two cylinders, arranged in a V-shape. When monkeys saw which cylinder the food went into, they quickly ran to that spot to retrieve the food. But when monkeys weren't sure which container had the food, they instead ran to the junction of the two cylinders where they could check the contents of both before they committed to searching one container. They rarely approached the center if it was not possible to check the other locations in this way.

These results show that monkeys spontaneously used information about their own knowledge states when figuring out how to search for the [food](#) .

"Our human understanding of when we need more [information](#) is such a ubiquitous behavior that we never give it a thought," Santos said. "When

navigating a new city, we know the difference between knowing where we're going and realizing we need a map. When considering grabbing an umbrella, we already know it's raining or that we need to look outside. Our results hint that monkeys have that same feeling of certainty and uncertainty themselves, and it guides their behavior."

Provided by Yale University

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