

Do animals think rationally? Research suggests rational decision-making doesn't require language

November 1 2017, by Jeannie Kever



Cameron Buckner, assistant professor of philosophy at the University of Houston, says empirical evidence suggests a variety of animal species are able to make rational decisions, despite the lack of a human-like language. Credit: University of Houston

Previous research has shown that animals can remember specific events, use tools and solve problems. But exactly what that means - whether they are making rational decisions or simply reacting to their environment through mindless reflex - remains a matter of scientific dispute.

Cameron Buckner, assistant professor of philosophy at the University of Houston, argues in an article published in *Philosophy and Phenomenological Research* that a wide range of animal species exhibit so-called "executive control" when it comes to making decisions, consciously considering their goals and ways to satisfy those goals before acting.

He acknowledges that [language](#) is required for some sophisticated forms of metacognition, or thinking about thinking. But bolstered by a review of previously published research, Buckner concludes that a wide variety of animals - elephants, chimpanzees, ravens and lions, among others - engage in rational decision-making.

"These data suggest that not only do some animals have a subjective take on the suitability of the option they are evaluating for their goal, they possess a subjective, internal signal regarding their confidence in this take that can be deployed to select amongst different options," he wrote.

The question has been debated since the days of the ancient philosophers, as people considered what it means to be human. One way to address that, Buckner said, is to determine exactly what sets humans apart from other animals.

Language remains a key differentiator, and Buckner notes that serious attempts in the 1970s and '80s to teach animals human language - teaching chimpanzees to use sign language, for example - found that although they were able to express simple ideas, they did not engage in complex thought and language structures.

Ancient philosophers relied upon anecdotal evidence to study the issue, but today's researchers conduct sophisticated controlled experiments. Buckner, working with Thomas Bugnyar and Stephan A. Reber, cognitive biologists at the University of Vienna, last year published the results of a study that determined ravens share at least some of the human ability to think abstractly about other minds, adapting their behavior by attributing their own perceptions to others.

In his latest paper, Buckner offers several examples to support his argument:

- Matriarchal elephants in Kenya's Amboseli National Park were able to determine the threat level of human intruders by differentiating ethnicity, gender and age, suggesting an understanding that adult Maasai tribesmen sometimes kill elephants in competition for grazing or in retaliation for attacks against humans, while Kamba tribesmen and women and children from both tribes don't pose a threat.
- Giraffes are not generally considered prey by lions in Africa, due to the long-necked animals' ability to deliver skull-crushing kicks. Lions in South Africa's Selous Game Reserve, however, are reported to have learned that giraffes found in a sandy river bed can get stuck and even trip, making them suitable prey.

His goal, Buckner said, was to compile the empirical research, "to see that we've accumulated enough evidence to say that [animals](#) really are rational in a distinctive way."

More information: Cameron Buckner. Rational Inference: The Lowest Bounds, *Philosophy and Phenomenological Research* (2017). DOI: [10.1111/phpr.12455](https://doi.org/10.1111/phpr.12455)

Provided by University of Houston

Citation: Do animals think rationally? Researcher suggests rational decision-making doesn't require language (2017, November 1) retrieved 3 May 2024 from

<https://phys.org/news/2017-11-animals-rationally-rational-decision-making-doesnt.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--