

# Wild bearded capuchin monkeys really know how to crack a nut

April 30 2015

---



Male capuchin monkey, Jatobá, cracking a tucum nut. Credit: Dorothy Fragaszy

When it comes to cracking nuts, wild bearded capuchin monkeys are more skilled than anyone had given them credit for, according to researchers who report new findings in the Cell Press journal *Current Biology* on April 30.

The monkeys are known to use stone "hammers" to crack nuts. The new

study shows that the monkeys are quite careful about the amount of force delivered to those nuts. They adjust the force applied with each strike based on the condition of the nutshell, making it less likely that they'll end up smashing the tasty kernel inside.

"Wild bearded capuchin monkeys dynamically modulate their strikes based on the outcome of the preceding strike while using stone hammers to crack nuts," says Madhur Mangalam of the University of Georgia at Athens. "Until now, this level of dexterity was not suspected of any monkey."

Mangalam's graduate advisor, Dorothy Fragaszy, and her colleagues have studied nut-cracking in wild bearded [capuchin monkeys](#) since 2005, when they established the [EthoCebus research project](#). They were especially curious how the monkeys managed to crack such hard nuts. They also wondered whether the monkeys might change their nut-cracking approach with nuts that are softer.

In the new study, the researchers videotaped 14 capuchin monkeys cracking nuts. They carefully analyzed the tapes to determine the height and velocity of each and every strike. It typically takes several strikes with a stone to reach the nut inside.

And what they discovered came as quite a surprise.

"It was a 'eureka' moment when we realized that the monkeys modulated the strikes systematically according to the condition of the nut following the preceding strike," Mangalam says.

They had expected the monkeys to maintain the force of their strikes within a certain range, or possibly to increase it until the [nuts](#) cracked. It never crossed their minds that the [monkeys](#) might show such a sophisticated ability to match their action to the physical state of the nut.

But that's exactly what they did.

"Our finding opens our eyes to the fact that non-human primates modulate their actions with a tool to accommodate the rapidly changing requirements of the task, which is a cognitive accomplishment," Mangalam says.

The researchers now plan to examine whether other species make adjustments in tool use on the fly. They'll also explore how this kind of dexterity influences each species' tool-use repertoire.

**More information:** *Current Biology*, Mangalam et al.: "Wild Bearded Capuchin Monkeys Crack Nuts Dexterously"  
[dx.doi.org/10.1016/j.cub.2015.03.035](https://doi.org/10.1016/j.cub.2015.03.035)

Provided by Cell Press

Citation: Wild bearded capuchin monkeys really know how to crack a nut (2015, April 30)  
retrieved 27 April 2024 from  
<https://phys.org/news/2015-04-wild-bearded-capuchin-monkeys-nut.html>

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.