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Well-travelled chimps more likely to pick up tools and innovate



Find the honey

Andrew Bernard/Kibale National Park, Uganda

By **Colin Barras**

Spot a tool-using chimpanzee in Uganda's Budongo Forest, and you could probably say it's come a long way – in more ways than one. Chimps here are more likely to make use of tools to gather food if they have used up precious energy reserves travelling in the previous week.

The finding suggests that balancing energy needs might push apes into experimenting with tools, with possible implications for understanding what drove our ancestors to develop

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new foods that they can only access with tools.

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Thibaud Gruber at the University of Neuchatel, Switzerland, weighed up these two ecological ideas. He and his colleagues have spent several years studying a community of 70 chimps in the Budongo Forest that rarely use tools to forage.

The researchers drilled a small hole in a log and filled it with honey. The chimps could only get at the honey using a tool – for instance a rolled-up leaf that they could poke into the hole.

Some 52 of the chimps engaged with the set-up, and 10 of them worked out how to access the honey. To find out why these particular chimps did so while others did not, Gruber and his colleagues reviewed records of the apes' activity patterns in the days and weeks beforehand.

A couple of patterns emerged. The 52 chimps that interacted with the log had typically travelled more than average in the preceding weeks and eaten fewer ripe fruits. Chimps that were less well travelled and better fed didn't seem to be as motivated by the prospect of the honey.

What distinguished the 10 chimps who persisted was that they had travelled the most of any of the chimps in the week before they encountered the honey-filled log.

What drives the evolution of tool use?



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published studies on other tool-using chimps, he found that those with the largest toolkits were generally those that travelled furthest.

The pattern might even apply to our hominin ancestors. Plenty has been written on a possible link between hominin tool use and the transition to walking on two legs, but less on the importance of travel itself. “I would love to see whether a similar effect of travel could have been at work during human evolution,” says Gruber.

Kathelijne Koops at Harvard University says the study is important because it explores the motivations for tool use at the level of individuals rather than the group, as many previous studies had done.

However, Koops’s own research favours the other evolutionary hypothesis for tool use – that it can be driven by the opportunity to exploit new foods. She would like to see future studies explore the idea at the individual level.

Gruber would welcome such studies too. He agrees that tool use involves both necessity and opportunity – as well as spontaneous invention. “I don’t really like the way hypotheses are mounted against each other, while they are not mutually exclusive and actually quite complementary,” he says.

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