THE MARVEL OF MUTUALISM

Greater Honeyguides learn the culturally determined signals of local human partners

Greater Honeyguides actively seek us out as humans. They attract our attention with distinct chattering calls and lead us through the bush to show us a bees' nest, then wait for us to harvest it. This reveals wax for the honeyguides and honey for us – a favourite food for each species. By cooperating with us, honeyguides exchange their knowledge of the environment for our skills at subduing the bees with smoke and chopping open their nest with tools. This remarkable relationship is facilitated by two-way communication: not only do honeyguides call to us humans, but human honey-hunters call to attract honeyguides and coordinate a cooperative hunt. These specialised calls vary culturally across Africa, from whistled melodies to trills and grunts, to whoops and whistles produced with snail shells or hollow fruits.

A new study from the FitzPatrick Institute, in collaboration with the University of California, Los Angeles, shows that honeyguides facilitate cooperation by learning the culturally determined calls of the human population around them. In this study, we experimentally swapped honey-hunters' calls from two parts of Africa: a loud trill and grunt (*brrr-hm!*) used by Yao honey-hunters in the Niassa Special Reserve in Mozambique; and a beautiful, whistled melody used by Hadza honey-hunters in the Kidero Hills of northern Tanzania. When we played back the calls at consistent volume on honey-hunting trips at both locations, we found that honeyguides were two to three times more likely to interact with us when we played back the local honey-hunting call rather than the foreign call or arbitrary human sounds.

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Yao honey-hunter Seliano Rucunua, one of the many honey-hunters who inspire and support long-term research on human–honeyguide cooperation, holding a male Greater Honeyguide briefly captured for research in the Niassa Special Reserve.

These findings show that honeyguides learn and prefer the calls of the local human culture they interact with. This increases the benefits of cooperation for both birds and people: effective communication between species makes honeyguides more likely to interact with a cooperative human (and so get more wax); and humans are more likely to interact with a cooperative honeyguide (and so get more honey).

These results also support the idea that cultures can co-evolve across species, much as genetically inherited adaptations do, as different species reciprocally influence and reinforce each other's learnt adaptations. Once humans start using a specialised signal, it pays honeyguides to learn it, which in turn reinforces the benefit to humans of consistently using it – and so on.

Further, these findings suggest that communication between humans and other species can function through arbitrary sounds being assigned meaning, in a similar manner to human language. The key thing for both language and these interspecies signals is that everyone agrees what the sounds mean. So it seems that such social conventions improve our ability to cooperate not only with humans, but also with other species.

Cooperation and communication between honeyguides and humans is a likely ancient part of our own humanity. It shows that humans are an integral part of the ecosystems we evolved in. We should treasure and respect those parts of Africa, such as Mozambique's Niassa Special Reserve, where this rich interspecies culture still thrives.

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Record your Greater Honeyguide sighting online at honeyguiding.me

Visit AfricanHoneyguides.com *for more information on honeyguide research.*

Reference

Spottiswoode C, Wood B. 2023. Culturally determined interspecies communication between humans and honeyguides. *Science* 382(6675): 1155–1158, doi 10.1126/science.adh4129.

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