Mongooses pass traditions on to their young, too

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Dwarf mongoose (Helogale parvula) in Korkeasaari zoo. Image: Wikimedia Commons

For the passing on of traditions, it appears that an especially big brain isn't required. A new report published online on June 3rd in *Current Biology*, a Cell Press publication, shows that even mongooses in the wild carry out traditions that are passed down from one generation to the next.

"Our study is, to my knowledge, the first to provide strong evidence that foraging specializations are not only long-lived in wild animals but are also transmitted from adults to young through social learning and therefore qualify as traditions," said Corsin Müller, now at the University of Vienna. "Notably, our work did not investigate a close

relative of humans, or a particularly large-brained animal, but what one could say is a rather 'unspectacular' carnivore species, banded mongooses."

As such, Müller added, the findings "suggest that traditions may actually be fairly widespread in the animal kingdom. They are by no means restricted to some few species, such as great apes or dolphins."

Mongooses do have some features that made them ideal for a study like this one as a result of peculiarities of their social system, even if they aren't where scientists would normally think to look for traditions, Müller explained. When banded mongoose pups emerge from the den, most of them form exclusive one-to-one associations with a particular adult, usually an older brother, cousin, or uncle, who becomes their primary caretaker and "escort." That exclusive chaperoning system made it possible for the researchers to control the information about foraging techniques individual young mongooses experienced.

Banded mongooses feed on a wide range of prey species, including prey items with hard shells, such as bird eggs or rhinoceros beetles. They crack these encased food items open in one of two ways, either holding them in place with their front paws and biting them open or hurling them against a hard surface such as a stone or tree trunk to smash them open. Müller's team took advantage of that natural behavior by designing a novel food item, a modified "Kinder Egg" plastic container containing a mix of rice and fish, that could be opened using either the biting or the smashing method.

The researchers first presented adults on their own with the novel food item and discovered that adults, even those living within the same group, differed markedly in their preference for one or the other technique. Some used one method almost exclusively, while several others bit and smashed the eggs about equally.

Those individual preferences persisted over time, fulfilling the longevity requirement for a behavioral tradition, but were they passed on from adults to pups? It turned out that the answer is yes, the researchers report. Independent juvenile mongooses, when tested with the novel food item for the first time, tended to copy what they had observed their escort do with the plastic eggs when they were younger. They continued to hold those preferences into adulthood.

The findings show that multiple traditions can coexist in animals, in cases where young acquire their behavior by copying specific role models rather than copying the simple majority.

"Some people will not like this finding, since they see it as a challenge to our view that humans are special," Müller said. "I see it differently: studies like ours provide exciting insights into how our own peculiar behavior could come about as a result of an evolutionary process. And acknowledging that processes playing an important role in human behavior occur also, at least in very basic forms, in other animals does not make us any less special. Humans are still unique, as is any other species."

More information: Cant et al.: “Report: Imitation and Traditions in Wild Banded Mongooses.” Publishing in Current Biology 20, 1-5, July 13, 2010. DOI 10.1016/j.cub.2010.04.037

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