

Mongoose inherit behavior from role models rather than parents

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Mongoose escorting. Credit: Harry Marshall

Young mongooses learn lifelong habits from role models rather than inheriting them from genetic parents, new research shows. Banded mongooses live in social groups where pups are consistently cared for

one-to-one by a single adult known as an "escort"—not their mother or father.

They develop "niche" diets and, by studying these, University of Exeter researchers showed pups inherit the behaviour of their escort, rather than parents.

The findings offer a fascinating insight into one of the great puzzles of evolution—how diversity persists rather than disappearing with passing generations.

"It was a big surprise to discover that foraging behaviour learned in the first three months of life lasts a lifetime," said Professor Michael Cant, of the Centre for Ecology and Conservation on the University of Exeter's Penryn Campus in Cornwall.

"This is pretty remarkable, since we have no evidence that pups and escorts preferentially hang out together after [pups](#) become independent.

"Cultural [inheritance](#), the transmission of socially learned information across generations, is a huge influence on [human behaviour](#): we behave the way we do not just because of our genes but also because of what we learn from parents, teachers and cultural [role models](#).

"It is less well appreciated that cultural inheritance is a major force shaping behaviour in a wide range of non-human animals, from insects to apes—and mongooses."

To explore the influence of escorts on eating habits, the researchers chemically analysed the whiskers of individual mongooses.

The findings help explain how diverse [behaviour](#) persists in nature.

Early critics of Darwin's theory of natural selection argued that, if his theory was correct, the result should be the erosion of the very variation he suggested as the engine of evolution.

The genetic reasons why this does not happen have long been understood, but the same criticism could be made of cultural inheritance: when everyone learns from the same teacher, or where each individual learns from everyone, variation should disappear.

But the new research on mongooses shows that where individuals learn from their own personal teacher, cultural inheritance can work to maintain diversity.

"Cultural inheritance is usually expected to lead to uniformity within groups," said Dr. Harry Marshall of the Centre for Research in Ecology, Evolution and Behaviour at the University of Roehampton, a co-author of the study.

"But our work confirms a classic theoretical prediction that where individuals learn from their own personal [teacher](#), cultural inheritance can work to maintain diversity."

The paper, published in the journal *Current Biology*, is entitled: "Decoupling of genetic and cultural inheritance in a wild mammal."

More information: "Decoupling of genetic and cultural inheritance in a wild mammal" *Current Biology* (2018). [DOI: 10.1016/j.cub.2018.05.001](https://doi.org/10.1016/j.cub.2018.05.001)

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