

# Researcher decodes the secret language of ring-tailed lemurs

July 11 2017, by Blake Eligh

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Credit: University of Toronto

Why do lemurs go "hmm?" It's not because they don't know the words, but the answer may provide important clues about how ancient human ancestors may have socialized with each other. In research published in *Ethology*, U of T Mississauga primatologist Laura Bolt recounts how vocalizations by Madagascar's ring-tailed lemurs may aid in protecting them from predators and bolster social cohesion within the troop.

Bolt spent five months at the Beza Mahafaly Special Reserve, a remote protected park in southwest Madagascar, studying vocal communication in male members of five different lemur troops. Ring-tailed lemurs have the largest vocal repertoire of all lemurs, and are known to make 22 different vocal sounds, some of which Bolt tested for their role in [social](#)

[cohesion.](#)

"Social lemurs—those who live in social groups—are the living primates most like our early ancestors," Bolt says. "Patterns of individual and sex-specific call usage are still poorly understood. Gaining a better knowledge of how group-living lemur species use contact calls helps to inform our understanding of the evolution of primate cognition."

Bolt focused on two specific vocalizations—"moans" and "hmms" produced by male lemurs, which are the lowest ranking members in the female-dominant troop structure. Her study is the first to report on the behavioural usage of "hmm" calls in wild ring-tailed lemurs.

Ring-tailed lemurs spend their days moving through the tree canopy or along the forest floor in search of food, leaving the troop vulnerable to predators like the mongoose-like fossa, harrier hawks, and feral cat and dog populations. Contact calls are thought to help the lemurs keep track of other members of the troop, providing a measure of safety.

[Listen to](#) a ring-tailed lemur "moan" [vocalization](#):

[Listen to](#) a ring-tailed lemur "hmm" vocalization

Lemur moans are short, high-pitched vocalizations that are used most frequently when lemurs are apart from each other in the trees or on the ground. In contrast, the "hmm" vocalization is quieter and is used most frequently when lemurs are moving, feeding, and keeping watch for predators.

"We found that male ring-tailed lemurs used both moan and hmm calls to maintain proximity to their nearest neighbour," Bolt says. "They performed both moan and hmm vocalizations at higher rates during

behaviours that could lead to separation from group members, such as during travel or vigilance." For the moan vocalization, the highest call rates occurred when the nearest neighbor was further away.

Bolt found that "hmm" vocalizations were used most often by low-ranking males, especially when preferred companions were nearby. Since low-ranking individuals are often targets of aggression in this species, Bolt concludes that low-ranking males make "hmm" sounds as a way to stay close to specific members of the group who will show them more tolerance.

"These results further our understanding of how ring-tailed [lemur](#) vocalizations may function to keep social groups together," she says.

**More information:** Laura M. Bolt et al. Contact calling behaviour in the male ring-tailed lemur (*Lemur catta* ), *Ethology* (2017). [DOI: 10.1111/eth.12637](#)

Provided by University of Toronto

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