

Female rhesus macaque calls may reflect familiarity rather than relatedness

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Rhesus macaques on Qianling Shan in the outskirts of Guiyang. Credit: Wikipedia/CC BY-SA 2.0

An acoustic analysis showed that similarities between contact calls - known as coos - of female rhesus macaques may be explained by familiarity rather than relatedness, according a study published August 31, 2016 in the open-access journal *PLOS ONE* by Dana Pfefferle from the Cognitive Neuroscience Laboratory of the German Primate Center, Germany, Kurt Hammerschmidt from the Cognitive Ethology Laboratory of the German Primate Center, Germany, and colleagues.

Previous work has suggested that non-human primates can recognize the coos of kin, though few have distinguished between relatedness and [familiarity](#). To investigate whether call similarities actually reflect relatedness, Pfefferle, Hammerschmidt, and colleagues recorded and analyzed the acoustic structure of coos from 67 adult female rhesus macaques in a longstanding colony on the island of Cayo Santiago, Puerto Rico. The degree of relatedness was determined using the colony's long-term genetic database, and familiarity was determined using factors including age, group- and matrilineal membership.

Contrary to their expectations, the researchers found coo similarity was predicted by familiarity, but not by kinship: coo call structure was similar in females that were close in age or that shared group and matrilineal membership. This suggests that although these calls appear largely innate, experience and frequent social interaction have more impact on acoustic similarity than genetic background. To control for the strong effect of familiarity on the acoustic structure of calls, the researchers recommend that future studies focus on similarities between

unfamiliar kin.

"We tested whether the call structure of closely maternal and/or paternal related females, as determined from extensive pedigree data, differed from the call structure of unrelated females, while controlling for familiarity of subjects," said Dana Pfefferle. "Kinship did not predict similarities in call structure, whereas call structure was more similar when produced by females of similar age as well as by females with higher familiarity, suggesting that experience is more decisive than genetic background."

More information: Pfefferle D, Hammerschmidt K, Mundry R, Ruiz-Lambides AV, Fischer J, Widdig A (2016) Does the Structure of Female Rhesus Macaque Coo Calls Reflect Relatedness and/or Familiarity? *PLoS ONE* 11(8): e0161133. [DOI: 10.1371/journal.pone.0161133](https://doi.org/10.1371/journal.pone.0161133)

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