

Mongoosees solve inequality problem

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Banded mongooses. Credit: Harry Marshall

A fair society has evolved in banded mongooses because parents don't know which pups are their own, new research shows.

Mothers in banded [mongoose](#) groups all give birth on the same night, creating a "veil of ignorance" over parentage in their communal crèche

of pups.

In the new study, led by the universities of Exeter and Roehampton, half of the pregnant mothers in wild mongoose groups were regularly given extra food, leading to increased inequality in the birth weight of pups.

But after giving birth, well-fed mothers gave extra care to the smaller pups born to the unfed mothers—rather than their own pups—and the pup size differences quickly disappeared.

Dr. Harry Marshall, of the Department of Life Sciences at the University of Roehampton, said: "In most of the [natural world](#), parents favor their own young.

"However, in banded mongooses, the evolution of remarkable birth synchrony has led to the unusual situation that [mothers](#) don't know which pups are their own, and therefore cannot choose to give them extra care.

"Our study shows that this ignorance leads to a fairer allocation of resources—in effect, a fairer society."

The study examined seven groups of banded mongooses in Uganda. Half of the pregnant females in each group were given 50g of cooked egg each day, while the other half were not given extra food.

Inequality at [birth](#) (measured by weight) was wider in breeding periods when food was provided than in periods where no extra food was given.

Professor Michael Cant, of the University of Exeter said: "We predicted that a 'veil of ignorance' would cause females to focus their care on the pups most in need—and this is what we found.

"Those most able to help offer it to the most needy, and in doing so

minimize the risk that their own offspring will face a disadvantage.

"This redistributive form of care 'levelled up' initial size disparities, and equalized the chances of pups surviving to adulthood.

"Our results suggest that the veil of ignorance, a classic philosophical idea to achieve fairness in human societies, also applies in this non-human society."

The research team included Professor Rufus Johnstone, from the University of Cambridge.



Banded mongooses. Credit: Harry Marshall

Funding for the study came from the European Research Council and the Natural Environment Research Council.

The paper, published in the journal *Nature Communications*, is entitled: "A veil of ignorance can promote fairness in a mammal [society](#)."

More information: "A veil of ignorance can promote fairness in a mammal society." *Nature Communications* (2021). [DOI: 10.1038/s41467-021-23910-6](#)

Provided by University of Exeter

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