

Study looks at reproductive inequality in humans compared to other species

May 22 2023, by Karen Nikos-Rose



Credit: CC0 Public Domain

In modern society, one parent may take a daughter to ballet class and fix dinner so the other parent can get to exercise class before picking up the son from soccer practice. To an observer, they seem to be cooperating in their very busy, co-parenting, monogamous relationship.

These people may think they are part of an evolved society different

from the other mammals that inhabit earth. But their day-to-day behavior and child-rearing habits are not much different than other mammals who hunt, forage for food, and rear and teach their children, researchers suggest.

"For a long time it has been argued that humans are an exceptional, egalitarian species compared to other mammals," said Monique Borgerhoff Mulder, professor emerita of anthropology at the University of California, Davis, and corresponding author of a new study. But, she said, this exceptionalism may have been exaggerated.

"Humans appear to resemble mammals that live in monogamous partnerships and to some extent, those classified as cooperative breeders, where breeding individuals have to rely on the help of others to raise their offspring," she said.

The UC Davis-led [study](#), with more than 100 researchers collaborating from several institutions throughout the world, is the first to look at whether [human](#) males are more egalitarian than are males among other mammals, focusing on the numbers of offspring they produce.

The article, "Reproductive inequality in humans and other mammals," was published this week (May 22) in the *Proceedings of the National Academy of Sciences*. Co-authors include researchers from UC Davis, The Santa Fe Institute, the National Institute for Mathematical and Biological Synthesis, and the Max Planck Institute for Evolutionary Anthropology, Germany.

The researchers amassed data from 90 [human populations](#) comprising 80,223 individuals from many parts of the world—both historical and contemporary. They compared the records for men and women to lifetime data for 45 different nonhuman, free-ranging mammals.

The researchers found that humans are by no means exceptional, merely *another* unique species of [mammal](#). Furthermore, as first author Cody Ross, former UC Davis graduate student in the Department of Anthropology now at the Max Planck Institute, points out "we can quite successfully model reproductive inequality in humans and nonhumans using the same predictors."

Egalitarianism in polygynous societies

Somewhat unexpectedly, when focusing specifically on women, the researchers found greater reproductive egalitarianism in societies that allow for polygynous marriage than in those where monogamous marriage prevails. In polygynous systems, in which men take several wives at the same time, women tend to have more equal access to resources, such as land, food and shelter—and parenting help. This is because women, or their parents on their behalf, favor polygynous marriages with wealthy men who have more resources to share.

Researchers observed something else in their work.

"It turns out that monogamous mating (and marriage) can drive significant inequalities among women," Borgerhoff Mulder said. Monogamy, practiced in agricultural and market economies, can promote large differences in the number of children couples produce, researchers found, resulting from large differences in wealth in such economies.

How humans may differ

The fact men are relatively egalitarian compared to other animals reflects our patterns of child rearing. Human children are heavily dependent on the care and resources provided by both mothers and

fathers—a factor that is unusual, but not completely absent—in other mammals, researchers said.

The critical importance of the complementary nature of this care—that that each parent provides different and often non-substitutable resources and care throughout long human childhoods—is why we don't show the huge reproductive variability seen in some of the great apes, said researcher Paul Hooper, from the University of New Mexico.

To support these inferences, however, anthropologists need more empirical data. "In short, the importance of biparental care is grounded in our model, but needs further testing," Borgerhoff Mulder said.

More information: Cody T. Ross et al, Reproductive inequality in humans and other mammals, *Proceedings of the National Academy of Sciences* (2023). [DOI: 10.1073/pnas.2220124120](https://doi.org/10.1073/pnas.2220124120)

Provided by UC Davis

Citation: Study looks at reproductive inequality in humans compared to other species (2023, May 22) retrieved 27 July 2024 from <https://phys.org/news/2023-05-reproductive-inequality-humans-species.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.