

Who's your daddy? If you're a gorilla, it doesn't matter

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Male silverback Gorilla in SF zoo. Image: Wikipedia.

Being the daddy isn't important for male gorillas when it comes to their relationships with the kids; it's their rank in the group that makes the difference, says new research published in *Animal Behaviour*. The authors of the study, from the University of California, Los Angeles (UCLA) - now with Lincoln Park Zoo in Chicago - the Dian Fossey Gorilla Fund International (Atlanta USA) and the Max Planck Institute for Evolutionary Anthropology (Leipzig, Germany) say this supports the theory that for most of their evolution, gorillas lived in groups with one male and several females.

Mountain gorillas - *Gorilla beringei beringei* - live in groups in the forests

of central Africa. One group, or troop, of gorillas can have more than one male as well as several females. However, scientists believe that this has not always been the case; earlier in their evolution, [mountain gorillas](#) may have lived in troops with only one male and several females.

For the new study, researchers tracked the way male mountain gorillas interact with [infants](#) to see if their behavior is similar to other primates that live in troops with more than one male. The results show that being the biological father does not influence the way male gorillas interact with infants, suggesting that their social structure is relatively new.

"For a long time there was an assumption that monkeys and apes didn't know who their fathers were in groups with multiple [males](#)," said Dr. Stacy Rosenbaum, lead author of the study from Lincoln Park Zoo, Chicago USA. "Thanks to advances in molecular genetics, we now know that's not always true. We wanted to look at how male gorillas interact with infants to see if their behavior supports this."

Primates like chimpanzees that live in troops with more than one male have a way of recognizing which infants belong to which males. For animals that live in groups with only one male this is not necessary, as the male is most likely the father of all the infants in the group. The researchers wanted to determine whether gorillas have evolved a way of recognizing their own offspring or father.

The researchers followed gorillas in Volcanoes National Park, Rwanda, and monitored the way the males and infants interacted. They looked at the amount of time the gorillas spent grooming each other and playing, and noted every ten minutes which gorillas were physically close to one another. They also looked at which males were dominant in the group.

The researchers analyzed more than 1500 hours of data and found that there is no evidence to suggest that gorillas recognize their own offspring

or father. Instead, they found that a male gorilla's dominance or social rank had a stronger influence on its relationships with infants; alpha males tend to be more nurturing and have stronger relationships with infants in the troop. While statistically they are most likely to be the father, many infants are also sired by other males.

"When we think of a human alpha male, we have a very specific set of cultural norms that go along with that, like aggression and not being very paternal," said Dr. Rosenbaum. "In gorillas that's not the case at all; dominant males are often the biggest in the group, but they are gentle and nurturing with the infants."

During the field research, Dr. Rosenbaum and her colleagues also collected sample of urine and feces from the gorillas. They are now analyzing those samples at Lincoln Park Zoo alongside their behavioral data to see if there is a hormonal component to these behaviors.

"We want to understand more about humans' evolutionary history by watching how [gorillas](#) behave. Our goal is to learn more about primate evolution generally, and great apes are particularly interesting since they are humans' closest living relatives."

More information: "Male rank, not paternity, predicts male–immature relationships in mountain gorillas, *Gorilla beringei beringei*" by S. Rosenbaum, J.P. Hirwa, J.B. Silk, L. Vigilant and T.S. Stoinski ([DOI: 10.1016/j.anbehav.2015.02.025](https://doi.org/10.1016/j.anbehav.2015.02.025)). The article appears in *Animal Behaviour*, Volume 104 (June 2015)

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