

Natural born killers: Chimpanzee violence is an evolutionary strategy

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The Ngogo males have just killed a male from a neighboring group. After the male is dead, one of the Ngogo males leaps on the body of the dead animal.

Credit: John Mitani

Man's nearest relatives kill each other in order to eliminate rivals and gain better access to territory, mates, food or other resources—not because human activities have made them more aggressive.

That is the conclusion of an international analysis of lethal [aggression](#) among different groups of chimpanzees in Africa studied over five decades. The research appears in the current issue of *Nature*.

"Observations that chimpanzees kill members of their own species have influenced efforts to understand the evolution of human violence," said University of Michigan anthropologist John Mitani, who helped to initiate and conceive the ambitious study that was conducted with 30 colleagues from around the world.

The study provides compelling evidence to counter the contention that such killing is not a natural behavior but an incidental outcome of aggression worsened by human activities such as deforestation or the practice of feeding groups of chimps that are being studied.

Instead, the research provides strong support for the view that killing is an evolved tactic, according to Mitani, who has been studying the behavior of wild chimpanzees in Uganda's Kibale National Park for two decades.

In this view, killing is an adaptive strategy that provides important reproductive benefits in the evolutionary sense, increasing access to resources such as territory, food or mates and thus making it more likely that individuals will survive long enough to reproduce and pass on their genes to future generations.

Mitani and colleagues assessed which factors were correlated with observed or inferred killings in 18 chimpanzee communities over decades.



Males grooming. Credit: John Mitani

Attackers were invariably males acting in groups, and victims were mainly males and nursing infants of other communities, who were unlikely to be close kin. When infants were killed, attackers sometimes removed them from mothers under circumstances in which they appeared capable of killing the mother as well, but did not do so.

The researchers assessed human impact by whether the community had been fed, whether the protected area they inhabited was large or small, and whether the area had been disturbed or deforested.

They found that the killings were most common in the east African communities of chimpanzees that were least affected by human interference of any kind. One community, which was part of Mitani's

long-term research project, had a high population density and large numbers of males who banded together in coalitions to conduct raids on neighboring troops.

No killings occurred at the site most intensely modified by humans in Guinea.

"Patterns of lethal aggression in Pan show little correlation with human impacts," the authors write, "but are instead better explained by the adaptive hypothesis that killing is a means to eliminate rivals when the costs of killing are low."

According to Mitani, there is nothing in the findings that suggest that the human propensity to kill others is hard-wired and unavoidable.

"There is considerable variation in rates of killing by chimpanzees living in different populations, so even in chimpanzees killing is not inevitable," he said. "And, of course, we are humans and not [chimpanzees](#). We have the ability to shape and alter our behavior in ways that they can't. We can alleviate considerable human suffering by harnessing that ability."

More information: Lethal aggression in Pan is better explained by adaptive strategies than human impacts, *Nature*, [dx.doi.org/10.1038/nature13727](https://doi.org/10.1038/nature13727)

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