

Chimpanzees unite against a common enemy

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After hearing vocalizations from the out-group, chimpanzees became more spatially cohesive and groomed one another more often Credit: Etsuko Nogami/KyotoU Kumamoto Sanctuary

In the face of threats from other groups, humans become more cohesive

and cooperative with their own, an association that Charles Darwin suggested could be an evolved capacity. Now a research group at Kyoto University has demonstrated experimentally for the first time that this propensity is shared with chimpanzees, one of our closest relatives.

"Despite the importance of understanding how humans can be cooperative with their in-group and still carry out acts of extreme out-group aggression, there has so far been little study on whether the association between these behaviors holds in [non-human primates](#)," says first author James Brooks.

Building on [field research](#) that suggested [chimpanzees](#) were more cohesive in days and months when they had out-group encounters, the team tested the direct relation between out-group threat and in-group cohesion by simulating an out-group encounter and observing the subjects' behavior.

Five groups of chimpanzees listened to vocalizations of unfamiliar individuals, along with a control of crow vocalizations. The team found that subjects who heard the out-groups became more vigilant and stressed, but instead of translating this into in-group tension, the chimpanzees drew closer to one another, engaged in more affiliative behaviors, and were less aggressive when given limited food compared to the control group.

This suggests that in chimpanzees, as well as in humans, competition between groups fosters cohesion, and further that intergroup competition in [human evolution](#) may have led to our ability to maintain cooperation and tolerant relations in large groups in the presence of a common enemy.

Subjects 29 chimpanzees in 5 groups (17 male and 12 female) at Kumamoto Sanctuary

Design Playback outgroup calls vs crow sounds (control) → Observation → Give food → Observation

Effects of outgroup calls compared to control



Chimpanzees showed elevated vigilance and stress but more social cohesion and tolerance within their own group Credit: James Brooks/Kyoto University

"This is the first experimental evidence that humans share this propensity with chimpanzees," explains study supervisor Shinya Yamamoto, "but it remains to be tested whether this is due to both species' strong evolutionary history of intergroup competition or a more common trait shared with other great apes."

The team is currently studying whether the same pattern is observed in bonobos—humans' other closest relatives—that are known for not committing lethal out-group aggression.

The paper "Uniting against a common enemy: Outgroup threat promotes ingroup cohesion in chimpanzees" will appear 24 February 2021 in the journal *PLOS ONE*.

More information: "Uniting against a common enemy: Outgroup threat promotes ingroup cohesion in chimpanzees" *PLOS ONE* (2021). [journals.plos.org/plosone/arti ... journal.pone.0246869](https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0246869)

Provided by Kyoto University

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