

# Targeting the social networks of group violence

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Two rifles belonging to Nyangatom men hang on a brush fence. Credit: Luke Glowacki

A strong network of friends may be just as big a factor in acts of group violence as having a charismatic leader or a savvy battle plan, according to a new study.

Researchers studied the [social dynamics](#) of the Nyangatom, a nomadic tribal group in East Africa that is regularly involved in violent raids with other groups. The researchers mapped the interpersonal connections among Nyangatom men over a three-year period, focusing on how those [friendship networks](#) affected the initiation of raids and participation in those raids.

The findings, which appear the week of Oct. 10 in the *Proceedings of the National Academy of Sciences*, may also apply to potentially violent activities associated with terrorism, revolutions, and gangs.

"Social interactions in networks are crucial for the emergence of positive phenomena, like cooperation and innovation, but they also play a role in other sorts of collective behavior, like the seemingly spontaneous emergence of violence," said Nicholas Christakis, co-director of the Yale Institute for Network Science (YINS) and senior author of the study. Christakis is a professor of sociology, ecology & evolutionary biology, biomedical engineering, and medicine at Yale.

"People go to war with their friends, and the social network properties of such violent activities have rarely been explored," Christakis added.

The study found that the initiation of Nyangatom raids depended on the presence of leaders who had participated in many raids, had more friends, and held central positions in the social network. However, membership in raiding parties depended on a population much larger than the leaders' network of friends. Non-leaders, in fact, had a bigger impact on raid participation than leaders, by virtue of their own friendships.

"Collective action doesn't get off the ground with just a charismatic leader attracting random followers," said Alexander Isakov, co-first author of the study and a postdoc at the Human Nature Lab at YINS.

"People are driven to participate in the group predominantly due to friendship ties."

A surprising aspect of the findings, according to the researchers, was the interplay between leadership and friendship in an environment without any formal hierarchy. The Nyangatom raiding groups are informal groups of peers, yet individuals played distinct roles that mirrored a formal leadership structure.

"They have no formal political leaders or chiefs," said co-first author Luke Glowacki, a research fellow at the Institute for Advanced Study in Toulouse, France. "The lack of political centralization creates an opportunity to study the social dynamics of collective action in a way that is difficult in a state society such as our own. We wanted to know how, outside of formal leadership or institutions, real-world collective behavior, including violence, is initiated."

The researchers said their work suggests that diminishing a leader's impact may prevent an original spark of violence. Yet the study also suggests that once violence begins, participants are likely to join in from throughout the entire group's population. Once initiated within a network, violent tendencies and groups propagate.

In addition, the study offers a mathematical system to observe multiple groups over a period of time and determine who the leaders are in the overall population.

**More information:** "Formation of raiding parties for intergroup violence is mediated by social network structure," by Luke Glowacki et al. *PNAS*, 2016.

Provided by Yale University

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