

# Study of East African group suggests punishment could sustain large-scale cooperation among strangers

14 June 2011, by Bob Yirka

(PhysOrg.com) -- Wondering why humans are the only species on the planet that cooperates with large numbers of others that they don't know, anthropologists Sarah Mathew and Robert Boyd, professors at UCLA, looked to the Turkana, an East African group whose survival depends on pasturing animals, for answers. In their joint paper, published in the *Proceedings of the National Academy of Sciences*, they suggest that social punishment for desertion or cowardice, doled out by the rest of the community after raids on other groups in attempts to steal livestock, served to both cause others to sign on, and then to cooperate appropriately in the raids, thus providing rewards for the whole group.

The study veers sharply from conventional wisdom that implies human [cooperation](#) on a large scale normally only comes about as a result of some sort of centralized authority, i.e. a government or some controlling body that marshals forces for a defined goal, such as pyramid building, or conquering neighboring countries. Instead, the study suggests, people can become motivated to gather in large numbers and then to work together towards a common goal, for no better reason than because they fear retribution from their fellow man. With the Turkana, for example, the researchers found that men who deserted before or during a raid, or who demonstrated cowardly behavior, were generally subjected to corporal [punishment](#).

To find out what motivated these men to take part in raids that could result in injury or death, the researchers interviewed 118 of the Turkana men. Based on the interviews, they found that at least one man ran off before the raid even began, forty three percent of the time, and forty five percent of the time someone performed badly enough during a raid to warrant some sort of punishment. Punishment was doled out in an informal manner

by the community at large, and usually involved the accused being tied to a tree so as to be beaten properly.

The authors conclude by stating the obvious, and that is, the men in the group cooperate in order to avoid punishment by the rest of the group, and this alone appears to be enough to get large numbers of men to participate in the raids, and then to perform cooperatively so as to achieve the desired goal of stealing someone else's livestock. Finally, because the raiding party size can grow into the hundreds, the authors theorize that a centralized control system is not required for large scale human cooperation projects and because of that, some of our early success as a species might be attributable to such collaborations.

**More information:** Punishment sustains large-scale cooperation in prestate warfare, *PNAS*, Published online before print June 13, 2011, [doi: 10.1073/pnas.1105604108](https://doi.org/10.1073/pnas.1105604108)

## Abstract

Understanding cooperation and punishment in small-scale societies is crucial for explaining the origins of human cooperation. We studied warfare among the Turkana, a politically uncentralized, egalitarian, nomadic pastoral society in East Africa. Based on a representative sample of 88 recent raids, we show that the Turkana sustain costly cooperation in combat at a remarkably large scale, at least in part, through punishment of free-riders. Raiding parties comprised several hundred warriors and participants are not kin or day-to-day interactants. Warriors incur substantial risk of death and produce collective benefits. Cowardice and desertions occur, and are punished by community-imposed sanctions, including collective corporal punishment and fines. Furthermore, Turkana norms governing warfare benefit the ethnolinguistic group,

a population of a half-million people, at the expense of smaller social groupings. These results challenge current views that punishment is unimportant in small-scale societies and that human cooperation evolved in small groups of kin and familiar individuals. Instead, these results suggest that cooperation at the larger scale of ethnolinguistic units enforced by third-party sanctions could have a deep evolutionary history in the human species.

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