

Q:1

Second- or third-party punishment? When self-interest hides behind apparent functional interventions

Relying on data collected among the pastoralist Turkana of Kenya, Mathew and Boyd (1) claimed that, in prestate societies, cooperation in warfare is enforced by costly third-party punishment. Such behavior would be functional and would have been selected by cultural group selection. Functionalism has a long history in anthropology. Cultural phenomena such as gift-giving, sacrifice, or social sanctions have been explained in terms of function for the group. Recent analyses, however, have shown that such phenomena are typically outcomes of complex sums of individual behaviors. Gift-giving is actually delayed reciprocity; apparent sacrifice, cases of tolerated theft; and social sanctions, self-interested retaliations by victims and their allies.

History has shown that functionalist arguments should be considered with caution. Mathew and Boyd's functionalist claim rests on three assertions: (i) third parties punish Turkana cowards, (ii) the punishment is costly for the punisher, and (iii) warfare benefits Turkana society as a whole.

Mathew and Boyd noted that punishment is carried out by the age-set (*anaket*) to whom the coward belongs. They failed to specify, however, that among the Turkana [as well as in many prestate societies (2)], regional groups of age-mates form the basic units of raids (3). Punishment would thus be carried out by *second* parties who have a direct stake in retaliating against individuals who put their life in danger by defecting from the raid.

Mathew and Boyd used the payment of "fines" by offenders as evidence of third-party punishment. The term "fines" here may be misleading because it suggests that the payment goes to a third party. In reality, offenders offer the punishing age-set(s) animals to consume in sacrificial rituals. Thus, fines are not turned into *collective* assets but are immediately transformed into individual benefits for interested parties.

Turning to warfare, functionality seems even more problematic. First, warfare among Turkana has been shown to lead to an

increased mortality of young children and adult males in their prime reproductive years, as well as decreased female fertility (4). Second, individuals benefit *directly* from their participation in warfare through reputation building and acquisition of livestock frequently reinvested in personal networks for social capital building (5). Third, as Mathew and Boyd stated, individuals are usually rewarded in proportion to their contribution to the raid, a clear signature of self-interested behavior. Raiders with a share of the loot redistribute animals to kin, stock associates, or age-mates, using the opportunity to increase their own social capital. Thus, although warfare may provide overall benefits to Turkana culture (which remains to be clearly demonstrated given the costs generated by constant warfare), these benefits are probably byproducts of fundamental phenomena based on individual interest.

When confronted with a group-functionalist explanation, we should ask ourselves: is there a more parsimonious explanation based on individual behavior? In the case of warfare, Mathew and Boyd's own report, as well as other studies of Turkana, suggest just that: individuals punish others who threaten their safety; punishments benefit punishers; and raiding is a way to achieve status and acquire resources.

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1. Mathew S, Boyd R (2011) Punishment sustains large-scale cooperation in prestate warfare. *Proc Natl Acad Sci USA* 108:11375–11380.
2. Ritter ML (1980) The conditions favoring age-set organization. *J Anthropol Res* 36: 87–104.
3. Lamphear J (1994) The evolution of Ateker 'new model' armies: Jie and Turkana. *Ethnicity and Conflict in the Horn of Africa*, eds Fukui K, Markakis J (James Currey, London).
4. Gray S, et al. (2003) Cattle raiding, cultural survival, and adaptability of East African pastoralists. *Curr Anthropol* 44:3–30.
5. Bollig M (1990) Ethnic conflicts in North-West Kenya. *Z Ethnol* 115:73–90.

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The authors declare no conflict of interest.

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