



Solving the puzzle of human warfare requires an explanation of battle raids and cultural institutions

Glowacki and Wrangham provide a valuable analysis of reproductive success and raiding among the Nyangatom pastoralists in Ethiopia (1). The authors divided raiding into low-risk stealth raids and high-risk battle raids and found that elder males reputed to participate in stealth raids as youths had more wives and offspring than other elder males. Glowacki and Wrangham (1) claim this result supports the “general proposition that warriors participating in small-scale warfare tend to receive fitness-enhancing benefits.” However, Glowacki and Wrangham’s analysis does not warrant such a general claim.

Human warfare is an evolutionary puzzle because, unlike intergroup violence in any other organism, humans take great reproductive risks while cooperating in large groups of unrelated individuals. Our main concern with Glowacki and Wrangham’s (1) conclusions is that they show a correlation for stealth raids, not battle raids. Stealth raids, which resemble intercommunity violence in chimpanzees (2), are relatively easy to explain because they carry a very low risk of mortality and are comprised of a dozen or fewer close associates. Battle raids, which are more uniquely human (3), are the greater evolutionary puzzle because they can involve a few hundred unrelated warriors, have much higher mortality (4), and create their own public-goods dilemma, where shirkers can escape with loot while leaving braver men to fight and die (4). Any general explanation of the uniquely human way of war needs to account for cooperation in battle raids.

Whatever the association between the two types of raiding, Glowacki and Wrangham’s (1) conclusions are problematic. Suppose, for example, a negative correlation, where all warriors seek cattle but use different strategies. Self-interested warriors are cautious on battle raids, but participate enthusiastically in low-risk stealth raids. Prosocial warriors fight bravely on battle raids, increasing the raiders’ chance of victory. Finding that stealth raiders have higher reproductive success would hardly be evidence that warfare generally increases fitness. Rather, it would suggest that selection favors cautious free-riding over bravery.

Alternatively, suppose a positive correlation, where some prolific raiders are more likely to participate in both types of raids. Although it might seem that stealth raiding would be a good proxy for raiding in general, a positive correlation between stealth and battle raids introduces a survivorship bias that would overestimate the reproductive success of raiders. Because Glowacki and Wrangham (1) measured only the reproductive success of elderly survivors, their sample does not include those prolific raiders who died in battle. This is likely a large group. Among the Nyangatom’s neighbors, the Turkana, over 50% of adult males die in battle and half of these deaths occur in offensive combat (4).

Despite our critique, we think that Glowacki and Wrangham’s (1) description of the Nyangatom’s cultural institutions of loot division is useful for understanding what might

motivate Nyangatom warriors to fight. We agree with Glowacki and Wrangham that understanding these institutions is critical for understanding human warfare, and find that their analysis raises additional questions: How do cultural rules for rewarding brave warriors emerge? Why are these rules supported by the warriors’ reproductive competitors? Why do these rules tend to promote outcomes that benefit large groups of nonkin?

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2 Wrangham RW, Glowacki L (2012) Intergroup aggression in chimpanzees and war in nomadic hunter-gatherers: evaluating the chimpanzee model. *Hum Nat* 23(1):5–29.

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