

# The Invention of Fistfighting

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## Abstract

It has been hypothesized that key aspects of human male upper limb and facial morphology evolved through selective pressures related to fistfighting. Based on the primatological, archaeological, and ethnographic evidence, I argue these proposals are misguided. An important trend during recent hominin evolution was a decline in upper body strength and skull robusticity, coinciding in part with the rise of complex tools and weaponry. Consistent with this, dueling with weapons is a more salient form of male-male conflict and conflict management than fistfighting across contemporary hunter-gatherer societies. Among foragers in the Standard-Cross-Cultural Sample (SCCS), fistfighting is comparatively rare, while wrestling is widespread, and dueling with weapons falls in between. I emphasize that hypotheses regarding human evolutionary history should be evaluated carefully against the cross-species, cross-cultural, and historical evidence.

## Introduction

Within the last decade, a series of papers have been published investigating the hypothesis that selection pressures related to fistfighting had a significant impact on the morphology of modern male *Homo sapiens*, and in some cases even on earlier hominin species (Carrier & Morgan 2015). Under this paradigm, some traits alleged to have been influenced by sexual selection to improve fighting performance include the structure of the hand and fist (Morgan & Carrier 2013), upper limb length (Caton & Lewis, 2021), dentition and facial skeleton (Carrier & Morgan 2015), and beards (Berseris et al. 2020). Research in this area has relied on experimental analogues (Morgan & Carrier 2013; Berseris et al. 2020), mixed-martial arts (MMA) fight outcome data (Caton & Lewis, 2021), and hospitalization data from contemporary state societies (Carrier & Morgan 2015) to make their inferences, and thus may not be reflective of our evolutionary history in important ways (Tinbergen 1963).

## How Common is Fistfighting Among Hunter-Gatherers?

Contemporary hunter-gatherer societies show a substantial degree of behavioral diversity (Kelly 2013), and while they are not ‘living fossils’ and do not represent simple analogies for our evolutionary past, the tremendous variation and flexibility they exhibit itself likely has a deep history in our lineage (Singh & Glowacki 2021). Hunter-gatherer behavioral strategies also exhibit

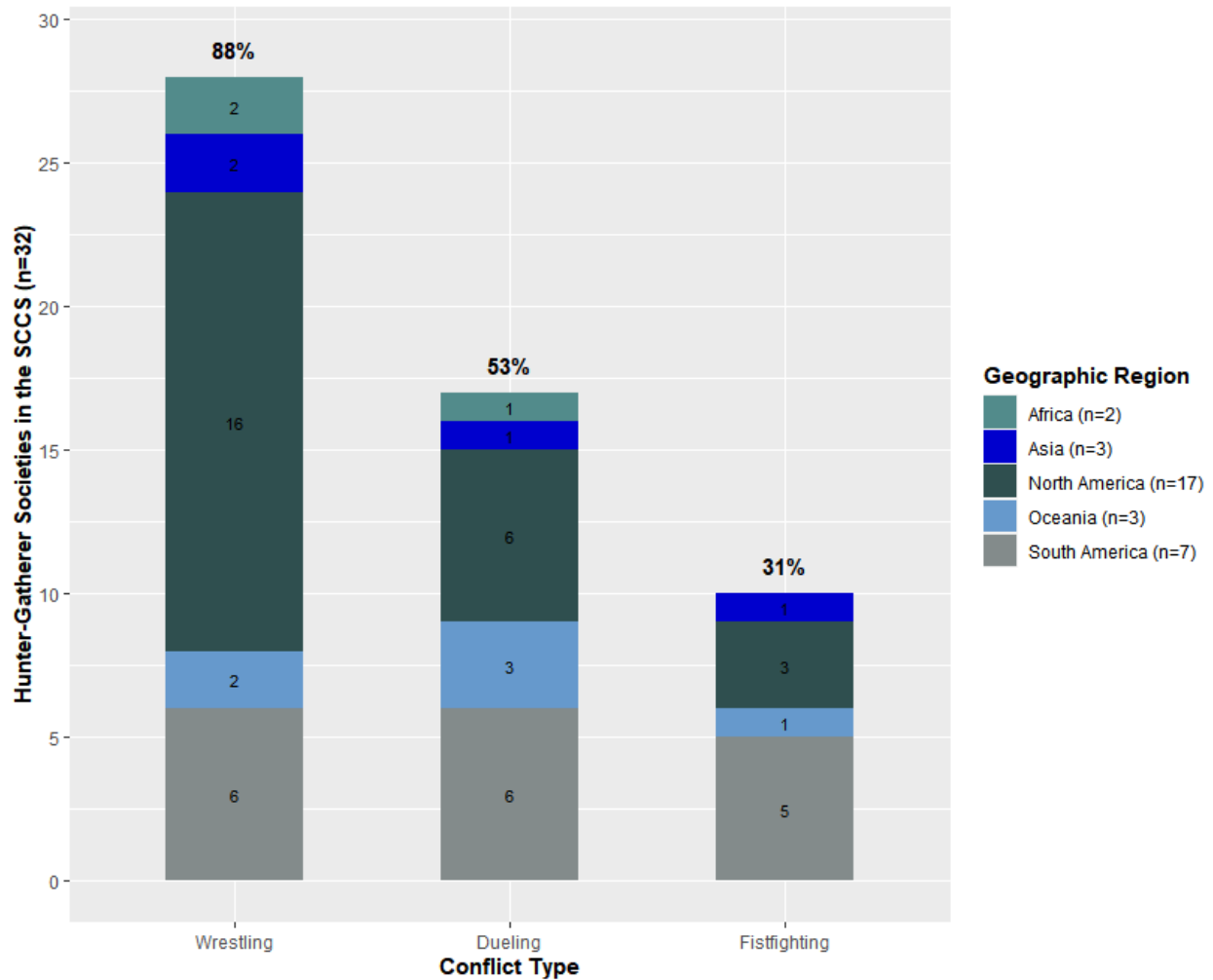
similarities, in similar ecologies, to the behavioral strategies of other species in domains of subsistence, reproductive, and foraging behavior (Barsbai et al. 2021; Buckner 2021). As the ethnographic record from forager societies provides direct observations of human behavior without agriculture, it is invaluable for testing hypotheses about human behavioral evolution (Marlowe 2005), and is a key source of information for reconstructing our evolutionary and cultural evolutionary history (Peoples et al. 2016; Walker et al. 2011).

**Method.** Using the Human Relations Area Files (HRAF) World Cultures database, I searched key terms (“duel, dueled, dueling, wrestle, wrestled, wrestling, boxed, boxing, fisticuffs, punch, punched, punching, fist, fistfight, OR fistfighting”) for the 40 hunter-gatherer societies in the Standard Cross-Cultural Sample (SCCS), looking for evidence of traditional practices of dueling with weapons, fistfighting, and wrestling across these societies, described either as individual cases or as a normative cultural practice. “Hunter-gatherer” is here defined as societies deriving greater than 86% of their subsistence from wild resources, per the coding system on HRAF.

**Table 1.** Hunter-gatherer societies in the SCCS with evidence of fistfighting, wrestling, or dueling with weapons as a form of conflict management (n=32).

<b>Culture Region</b>	<b>Fistfighting</b>	<b>Wrestling</b>	<b>Dueling</b>
<b>Africa</b>		Hadza, San	Hadza
<b>Asia</b>	Semang	Andaman, Semang	Ainu
<b>North America</b>	Kaska, Ojibwa, Northern Paiute	Aleut, Comanche, Copper Inuit, Eastern Apache, Haida, Ingalik, Innu, Kaska, Klamath, Kutenai, Mi'kmaq, Nuxalk, Ojibwa, Pomo, Southern Coast Salish, Yurok	Comanche, Copper Inuit, Eastern Apache, Kutenai, Mi'kmaq, Ojibwa
<b>Oceania</b>	Manus	Arunta, Tiwi	Arunta, Manus, Tiwi
<b>South America</b>	Abipón, Botocudo, Enxet and Enlhet, Tehuelche, Warao	Abipón, Botocudo, Enxet and Enlhet, Sirionó, Tehuelche, Yahgan	Abipón, Botocudo, Enxet and Enlhet, Tehuelche, Warao, Yahgan

**Results.** From this search, I found evidence of at least one of these practices for 32 of the 40 hunter-gatherer societies in the SCCS. Excluding the eight societies with insufficient data, 28 of 32 societies provided evidence of wrestling (88%), 17 societies had evidence of dueling with weapons (53%), and 10 societies (31%) had evidence of fistfighting (Table 1; Figure 1).



**Figure 1.** Prevalence of different conflict types among hunter-gatherer societies with sufficient data in the Standard Cross-Cultural Sample (n=32).

Importantly, as I will discuss further below, even the presence of fistfighting in some cases may not necessarily represent a traditional behavior. Holmberg (1950) describes a case among the Sirionó of South America, who traditionally settled their disputes with wrestling matches, where a man, “when drunk, struck an opponent with his fists. Everyone began to clamor that he was fighting unfairly, ‘like a white man.’” (Holmberg 1950). Since it was clear that fistfighting in this case represented a non-traditional behavior, I did not include it as present in this survey. An additional example of non-traditional fistfighting was recorded among the Tiwi of North Australia, discussed further below, for whom it was also not coded as present (see Table 2 for coding examples). It is possible, but certainly not guaranteed, that in some additional cases where fistfighting was coded here as present it actually represents a relatively recent introduction—a fact perhaps unmentioned or unknown to the ethnographer—and not a traditional practice.

**Table 2.** Examples of cases coded as “present” for each domain of conflict management.

Category	Culture Region	Society	Description
Wrestling	North America	Pomo	“Wrestling was called <i>gho nim mauk. E</i> (laying down each other). One man would place his hands in front of him for protection, while his opponent would try to trip him up and lay him on his back. When the man was down the contest was ended.” (Loeb 1926)
Dueling	East Asia	Ainu	“Another important method of settling disputes was a duel with clubs. This was the <i>Ukaru, U</i> meaning “mutually” and <i>Karu</i> meaning “to beat,” the whole word literally being taken as to beat each other with clubs.” (Takakura 1960)
Fistfighting*	Melanesia	Manus	“Two armed groups sometimes confronted each other. If they were parties within the same village their spears used to be taken from them and the quarrelling parties came to grips with their hands and fists. Spears are out of fashion now under white rule, so that the preliminary situation does not hold any longer, and even the fist fights have been mostly abandoned for court cases by active Manus preference.” (Fortune 1935)

\*Note that the fistfighting case here also includes an example of dueling with weapons. In no society was fistfighting noted to be present without cases of wrestling and/or dueling also being reported.

Further, in 2 of the 10 societies where fistfighting was coded as present—the Botocudo and the Warao, both of South America—reported cases occurred only among women, whereas reference was made in both societies to male duels with weapons. For example, Métraux (1946) writes among the Botocudo that, “There were constant conflicts between bands, typically settled by duels between pairs of opponents who alternately struck each other with long sticks,” thus describing a duel with weapons. He goes on to note that, “women took part in the fights, wrestling and boxing women of the opposite group.” (Métraux 1946). I mention this because the fistfighting paradigm places emphasis on selection on punching performance for men specifically, so cases of fistfighting only reported among women might be argued to represent an absence for purposes of evaluating that paradigm. I nonetheless decided to count these cases as present for this investigation. All data and codes are included in the supplementary files.

### **The Introduction of Fistfighting Among the Tiwi**

A useful case study on this question is the introduction of fistfighting by a Catholic missionary to the Tiwi hunter-gatherers of North Australia (Piling 1957). The “old-fashioned” method of settling disputes among the Tiwi was an inter-individual fight involving clubs or spears (Piling 1957). Sometime during the 1930’s, in a conscious attempt to “Westernize” interpersonal conflict, a missionary introduced fistfighting as an alternative means of settling inter-individual disputes (Piling 1957). Tiwi men realized that fistfighting was considered less violent and more acceptable than their traditional club or spear fights by white settlers and their legal system, and Tiwi boys

grew up using fisticuffs as a means of settling trouble (Piling 1957). By 1954 fistfighting was considered the socially acceptable method of handling conflict and spear-fights were gone (Piling 1957).

## **Ritualized Violence in the Santa Barbara Channel**

Another relevant case comes from archaeological evidence from hunter-gatherers who lived in the Santa Barbara Channel area of Southern California (Walker 1998). Skulls recovered from the region exhibit relatively high rates of cranial vault injuries, while nasal injuries are almost nonexistent, in stark contrast to the patterns found among skeletal samples of early 20<sup>th</sup> century Americans, who show high rates of broken noses (Walker 1998). Walker (1998) attributes these differences to a ritualized form of dispute resolution involving weapons among Santa Barbara Channel natives, and social influences related the rise of modern boxing beginning in the 18<sup>th</sup> century impacting the 20<sup>th</sup> century American sample (Walker 1998). As a related case study for reconstructing patterns of conflict behavior among Channel Islanders, Walker (1998) quotes at length a description from an 18<sup>th</sup> century Spanish explorer describing dispute resolution among natives living in the Monterey area, north of the Channel Islands:

“If two of the natives quarrel with each other, they stand body to body, giving each other blows as best they can, using what might be called spatulas of bone, which they always carry for the purpose of scraping off their perspiration while in the bath and during the fatigue of their marches. But as soon as blood is drawn from either of the combatants, however little he may shed, the quarrel is forthwith stopped, and they become reconciled as friends even when redress of the greatest injury is sought” (Priestley 1937: 67) (Walker 1998)

Notably, in the Tiwi case recounted further above, Piling (1957) writes that a well-liked movie about a boxer, ‘Killer McCoy’ (1947), which was shown at a local mission, may have also had an impact on local men and boy’s acceptance of fistfighting as a new norm, further suggesting the important role historically recent social influences play on this behavior, and how it may displace more traditional patterns of conflict management involving weaponry.

## **Hominin Trends**

One final challenge the fistfighting framework faces is the primatological and archaeological evidence showing the decline in body strength, relative forelimb length, and craniofacial robusticity during human evolutionary history (Cieri et al. 2014; O’Neill et al. 2017; Young et al. 2010). Carrier & Morgan (2015) acknowledge this point, proposing that the decline in aspects of skull robusticity and upper body strength, “may be a consequence of invention of improved weapon technology in early *Homo* that decreased the importance of physical strength and power during fighting.” (Carrier & Morgan 2015). The challenge for proponents of the fistfighting framework then becomes how to connect the relative lack of fistfighting among contemporary hunter-gatherers, and the decline in upper body strength and skull robusticity in the *Homo* lineage and among contemporary humans in particular, with the idea that fistfighting was a significant selection pressure during our evolutionary history. Potentially, if larger samples of relatively complete skeletal material from earlier hominin species begin to be uncovered, detailed studies of

trauma patterns may be able to shed light on the forms that conflict management took among our hominin ancestors. As it is, however, it appears unlikely that Western-style fistfighting was common among earlier hominins.

## **Conclusion**

Ethnographic evidence from contemporary hunter-gatherer societies indicates that wrestling and dueling with weaponry are common traditional practices of conflict management, while fistfighting appears comparatively rare, and in some cases may be the result of recent colonial influence and not represent a traditional mode of behavior. Archaeological evidence of skeletal trauma from a hunter-gatherer population in Southern California also provides evidence of dueling with weapons and an apparent absence of fistfighting, while archaeological evidence from more recent WEIRD populations (Henrich et al. 2010) provides more evidence of fistfighting (Walker 1998). The primatological, archaeological, and ethnographic evidence cast doubt on the idea that fistfighting acted as a significant selection pressure on human male morphology, however this does not preclude the possibility that other forms of male-male violence and competition may have influenced human male morphology. Nor does it preclude independent invention of fistfighting in different times and places, albeit plausibly at relatively low frequencies considering its infrequent presence among hunter-gatherers in the SCCS. This is an area ripe for further research, but careful cross-species, cross-cultural, and historical comparisons are essential to move forward.

## **Limitations**

One important limitation to keep in mind is that just because fistfighting—or wrestling, or dueling with weapons, for that matter—is not recorded for any particular society does not guarantee that this is a true ‘absence’. It could be that in some cases ethnographers simply did not observe, or for whatever reason did not report, these behaviors. This makes it plausible that this survey may underestimate the prevalence of one or all of these behaviors across this sample. Even if this is the case, however, it seems unlikely that this would preferentially impact the reported frequency of fistfighting, and not also be the case for wrestling and dueling with weapons. And since wrestling is already widely reported across this sample (88% (28/32) of cases with sufficient data, and 70% (28/40) across the total sample, even with the societies with limited data included), it seems unlikely any of these behaviors are significantly underreported in a way that would meaningfully change our interpretation.

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