

Correspondence—On Morgan & Carrier (2013)

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Combat is by definition competitive. Heritable advantages in it can be expected to play significant roles in replication of contributory genes. A recent paper (Morgan & Carrier, 2013) used innovative and interesting methodology to suggest that there has been strong selection on human hands to be used as weapons. Strong claims were advanced about the split of the human hand from the rest of the hominid lineage. However, this paper overlooked a key issue—which actually might serve to make their case regarding sexual selection on hands even stronger than they appear to have realised.

In brief—human fists are not effective killing weapons—being only effective in the context of male-male within-groups combat and used primarily to subdue. Such combat is ritualised, stylised, open to surrender from the defeated, and typically sub-lethal—although possessed of a credible threat of injury. Limited combat between males has been noted across taxa (Maynard-Smith & Price, 1973). With humans, limiting factors to fist damage have been revealed in cultural practices that are detectable across both time and space—specifically that effective use of fists requires long acculturation and hand protection. In the structural trade-off between holding and hitting human hands lean towards holding. For example, historical records of boxers show the use of hand wraps and wrist supports on ancient Greek, Mesopotamian, and Egyptian boxers (Poliakoff, 1987) but not of wrestlers. Grabbing and holding do not require artificial aids for effectiveness. Striking does.

Ritual in-group combat is to be distinguished from out group conflict (Fiske, 1992). In this, fists are rarely used due to the simple fact that unprotected fists are significantly less robust than heads and the other likely impact zones of trained fighters—such as the pyorrhoea infected mouths that have been the common human experience until the era of recent dental hygiene. The protection used on fists by fighters across both time and space argue for a ritual element to human fist fighting that is absent from the context of out-group conflict such as warfare—at least that in which killing is the goal.

Although many commentators have run all forms of human violence together, martial arts proper—in terms of being war training--are to be distinguished from combat sports. The former focus on killing, rapid subdual from ambush, or responses to ambush. There is no conception of a fair fight, and rarely one of surrender. Special forces' training typifies this sort of violence and—notably--make little or no mention of fist use (e.g. Fairbairn, 1942). Fights in this mode are nasty, brutish and short. Predators use this sort of mode to subdue prey and in a number of species this is distinct from the modes that males use to achieve dominance.

Combat sports occur within the context of ritual male-male competition. In other species there are also sub-lethal modes of combat with recognised methods of indicating submission (Maynard-Smith & Price, 1973). While there is much posturing and threat display—e.g. fist waving in humans—death is comparatively rare and even more rarely sought. In humans there are rules which are enforced with cultural norms.

What are the technical reasons for thinking that selection on human fists evolved in the context of the ritual rather than the warfare mode?

The most crucial point which might be unknown to those who have not participated in much actual combat is that the human fist is far from being an effective strike tool without much preparation. The hands of chimps—even when not closed—are far more effective transmitters of force and have been witnessed as such (e.g. de Waal, 2007). This is as one might expect from an appendage that can also support the animal's entire weight. While it may be true that there is buttressing of the impact zone of the human fist, (Morgan & Carrier, 2013) this does nothing to prevent the stretching of ligaments—especially between the metacarpals on impact. It is for this reason--and not to protect the knuckles--that boxers wrap up their hands. Even much so-called bare-knuckle fighting actually has the fighters bandaging their hands in advance. When this is not done such severe damage may result that a hand may be lost entirely following combat. This was recently vividly detailed in a recent Channel Four documentary (2012). It should be noted that this danger is present even after much training and experience—giving the lie to the notion that hands can be conditioned for such combat.

While there are many fantastical allusions to warriors using unprotected fists--and some so-called martial arts trade on these fantasies--when it comes to realistic combat sports fighters protect their hands. It can come as a rude awakening to those who have only trained in non-full contact sports but many martial arts techniques do not withstand genuine contests. In reaction to this, about twenty years ago a series of competitions were arranged to destruct test the martial arts. This Ultimate Fighting Championship has morphed into modern mixed martial arts—the closest thing to the early pankration of the ancient Greeks. In the earliest days of these mixed martial arts—the first ultimate fighting championship held in 1993—there was no hand protection. In consequence, even effective strikers--such as Gerard Gordeau--were routinely overwhelmed by grapplers. This was partly because hands would often be broken before the later rounds. Subsequent combat in MMA mandated hand protection that also allowed for grappling. It is important to emphasise that such protection is for hands more than heads. Folk who talk of “taking the gloves off” being synonymous with harder hitting display their ignorance of the realities of fist fighting. Boxing with gloves on is far more likely to result in brain damage because one can hit considerably harder and for longer.

The mild sexual dimorphism in human fists supports the idea of fist-fighting occurring within circumscribed and increasingly ritualised cultural contexts and it is in this light that splits from the rest of the hominid lineage are likely to have occurred.

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