

Myths about hunter-gatherers redux: nomadic forager war and peace

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Abstract

Purpose – *The purpose of this paper is to critique several studies that claim to show that nomadic foragers engage in high levels of inter-group aggression. This is done through exploring four myths: nomadic foragers are warlike; there was a high rate of war mortality in the Pleistocene; the nomadic forager data support the “chimpanzee model” of lethal raiding psychology; and contact and state influence inevitably decrease aggression in nomadic forager societies.*

Design/methodology/approach – *Using exact criteria, a sample of 21 nomadic forager societies is derived from the Standard Cross-Cultural Sample. This sampling method minimizes the chance of sampling bias, a shortcoming that has plagued previous studies. Only the highest quality ethnographic data, those classified as Primary Authority Sources, are used, which results in data on 148 cases of lethal aggression. The specifics of the lethal aggression cases are then discussed vis-à-vis the four myths to demonstrate the disjuncture between the data and the myths.*

Findings – *All four myths are found to be out of step with actual data on nomadic forager war and peace. Overall, the default interaction pattern of nomadic foragers is to get along with neighbors rather than make war against them. The findings contradict both assertions that there was a high level of war mortality among nomadic foragers of the Pleistocene and the chimpanzee model’s proposal that human males have a tendency or predisposition to form coalitions and make lethal attacks on members of neighboring groups.*

Research limitations/implications – *Consideration of nomadic forager war and peace should be contextualized in terms of social organization, contact history (including ethnocide, displacement, and other factors), and the current situation faced by extant forager populations. As in other contexts, the introduction of alcohol at contact or subsequently has increased nomadic forager aggression.*

Practical implications – *Propositions as to the aggressiveness of nomadic foragers should be viewed with skepticism because they are contradicted by data and a contextual view of nomadic forager social organization and ethnohistory.*

Social implications – *The debate over nomadic forager war and peace is connected to larger debates in modern society about the nature of human nature and has real-world implications regarding foreign policy and political approaches toward war and peace.*

Originality/value – *A critique of sampling, methodology, and theory is provided in this area.*

Keywords *Peace, War, Chimpanzee model, Coalitionary lethal aggression, Hunter-gatherers, Nomadic foragers*

Paper type *Conceptual paper*

A conflagration is raging over whether nomadic foragers are peaceful or warlike. On one front, the issues are debated in scholarly journals and books (Bowles, 2009; Bowles and Gintis, 2011; Endicott, 2014; Fry and Söderberg, 2013a; Guenther, 2014; Lee, 2014; Wrangham and Glowacki, 2012). In another theater, the arguments are laid forth to lay readers (Gat, 2006; Pinker, 2011; Wrangham and Peterson, 1996). Why does this question about nomadic foragers matter? One answer is that nomadic forager data are seen as crucial or at least relevant to much larger issues: How old is war? Are humans inherently warlike? Is war an evolved human trait? Can war, ironically, be credited with the development of altruism and cooperation? Do humans (read: males) have an evolved psychological propensity to form coalitions to attack members of neighboring societies?

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How questions such as these are answered has real world implications for the conduct of foreign policy, levels of military spending, approaches to law and order, violence reduction, peace education, and so forth. The social and political implications of perceiving human nature as replete with evolved propensities toward attacking others vs a view of human nature as inclined toward cooperatively getting along with others are far from trivial. At one extreme, we expect the worst of humanity and construct walls, amass arsenals, build ever more deadly WMDs, and come to fear terrorists behind every bush. At the other extreme, we might naively ignore adequate signs of threat and let the bullies have their ways. Under a third scenario, we engage in dialogue, promote good will, create and uphold pro-social norms and laws, and search for common ground and joint solutions to global issues. Perceptions can shape actions. The views of humanity's basic leanings can be ideological or data-based and in any case affect leaders and citizens alike.

In a word, as odd as it might seem, the study of war and peace in nomadic foragers has taken on academic and real-world significance (Connor, 2013; Endicott and Endicott, 2014; Keim, 2013; (The) *Economist*, 2013; Lopez, 2012; Narvaez, 2013). This area also has become a research minefield with its tripwires linked to definitional disagreement, sampling issues, and in some cases blatant distortions and sloppy science. Attempts to clear the mines will inevitably lead to some explosions. As the smoke and dust settle allowing a clearer assessment of the theories, methods, sampling, and data, we propose the following general conclusions will shine through.

First, nomadic forager social organization is not conducive to making war. The nomadic forager default is getting along with neighbors, not warring with them. Of any lessons we derive from nomadic forager studies about war, peace, and human nature, this one is the centerpiece.

Second, can nomadic foragers make war? Yes, especially under scenarios of crowding and intrusions, which are relatively recent (i.e. not long-term evolutionary) conditions. This does not mean nomadic forager societies are inclined toward war.

Third, nomadic forager societies, like societies in general, show variation in the amount of fighting and homicide that take place. A comparative view shows a continuum from hardly any physical aggression and a paucity of killing at one end to high levels of fighting and killing at the other, with numerous cases spread out across the middle ground.

Fourth, a supposed high level of warfare over the long stretches of human evolution in the Pleistocene does not account for the human capacities for cooperation and altruism. These prosocial traits, as manifested in food sharing, cooperative child-rearing, helping the young, sick, and aged, long preceded warfare (Hart and Sussman, 2009; Hrdy, 2009; Narvaez, 2013).

Fifth, there is little support for the "chimpanzee model" of lethal raiding psychology in the nomadic forager data. The evidence contradicts the idea that human males would have evolved tendencies to attack members of other groups whenever the perceived costs are low.

The route we will take to arrive at the above conclusions is to critically examine four frequently recounted myths:

1. nomadic foragers are warlike;
2. there was a high rate of war mortality in the Pleistocene;
3. the nomadic forager data support the "chimpanzee model" of lethal raiding psychology; and
4. contact and state influence inevitably decrease aggression in nomadic forager societies.

Myth 1: nomadic foragers are warlike

Myths are told and retold and after a while can take on pseudo-validity because everyone "knows" a myth to be true simply because they have heard it so many times before. However, this is the stuff of folklore, not science. It is easy to find retellings in the literature of the myth that nomadic foragers are a warlike breed (Bowles, 2009; Ember, 1978; Gat, 2006; Ghiglieri, 1999; Goldstein, 2001; Pinker, 2011; Wrangham and Peterson, 1996; Wrangham and Glowacki,

2012). In support of this popular myth, most sources cite the findings of a study by Ember (1978) titled "Myths about hunter-gatherers", which consequently is alluded to in the title of our paper.

Ember (1978) states her goal as wanting to bust the myth that hunter-gatherers are relatively peaceful. But immediately things get sticky. Ember (1978) offers four citations to the effect that nomadic foragers are largely peaceful, but she goes on to ignore the fact that the hunter-gatherer experts she cites are speaking about nomadic foragers, not all types of foragers.

Foragers can be subdivided into three main sub-types. Nomadic foragers depend on hunting and gathering for their subsistence requirements and lack domestic animals including horses. They are socially egalitarian in ethos and practice. If compared with all other types of societies, the nomadic forager lifestyle most closely resembles the subsistence mode and social organization of the evolutionary past of the Pleistocene, as demonstrated archeologically.

Complex foragers, by contrast, live in settled communities all or most of the year. Aside from not being nomadic, complex foragers also have social class distinctions. Almost without exception, complex foragers arose, at the earliest, just prior to the agricultural revolution in locations where adequate marine or other harvestable resources could support sedentary populations. Kelly (1995, p. 293, italics added) summarizes the features of egalitarian nomadic foragers as "small, *peaceful*, nomadic bands, men and women with few possession[s] and who are equal in wealth, opportunity, and status," whereas "complex hunter-gatherers are non-egalitarian societies, whose elites possess slaves, *fight wars*, and overtly seek prestige."

A third type of forager society is equestrian. Adoption of the horse for hunting occurred only after the Spanish introduced equines into the Americas a few centuries ago. If we are looking for analogies to Pleistocene life, it makes sense to focus on nomadic foragers for insights.

Ember (1978), however, assembles a sample of 31 forager societies of different stripes, nearly half of which are not nomadic foragers (Fry, 2006, 2011). And this is not the end of this story. Ember (1978) defines war so broadly as to include as so-called "war" feuding and at least some revenge homicides. Obviously homicide is not war. Fry (2006, 2011) has pointed out that under this definition, all sorts of personally motivated homicides could thus be counted as acts of "war." In sum, the Ember (1978) study does not show that nomadic foragers are warlike because it both muddles war, feud, and homicide and includes complex and equestrian foragers along with nomadic foragers.

Fry (2006) defines warfare, following Prosterman (1972, p. 140), as:

A group activity, carried on by members of one community against members of another community, in which it is the primary purpose to inflict serious injury or death on multiple nonspecified members of that other community, or in which the primary purpose makes it highly likely that serious injury or death will be inflicted on multiple nonspecified members of that community in the accomplishment of that primary purpose.

Applying this definition and using set criteria to define a sample of 35 foragers from the Standard Cross-Cultural Sample (SCCS) that at most obtain 5 percent of their subsistence needs from animal husbandry or agriculture, Fry (2006) reports that the complex foragers and the equestrian foragers make war whereas the majority of nomadic foragers in the sample (13/21) do not. Furthermore, in comparing the descriptions of what constitutes "war," most examples of nomadic forager warfare are not particularly severe in comparison to the warfare activities reported for complex and equestrian foragers.

Pinker (2011, p. 46), who is not an anthropologist, simply asserts without providing a single citation that:

Foraging peoples can invade to gain territory, such as hunting grounds, watering holes, the banks or mouths of rivers, and sources of valued minerals like flint, obsidian, salt, or ochre. They may raid livestock or caches of stored food. And very often they fight over women. Men may raid a neighboring village for the express purpose of kidnapping women, whom they gang-rape and distribute as wives. They may raid for some other reason and take the women as a bonus. Or they may raid to claim women who had been promised to them in marriage but were not delivered at the agreed-upon time. And sometimes young men attack for trophies, coups, and other signs of aggressive prowess, especially in societies where they are a prerequisite to attaining adult status.

Table I compares Pinker's assertions about warfare with data on 148 actual lethal events reported for the 21 nomadic forager societies distilled in a methodologically rigorous manner from the SCCS (Fry and Söderberg, 2013a, b). Regarding nomadic foragers, the discrepancies are significant between Pinker's assertions and the actual reasons for lethal aggression. Of the 13 reasons for raiding that Pinker (2011) specifies in the above quotation, only five are actually reported for the sample of foragers (Table I).

Whereas Pinker's assumption is that men from one group raid another group to capture women, the relative percentages in Table I suggest that something very different is going on. Only 2.1 percent of the incidences listed by Fry and Söderberg (2013a) entail raiding a different community for women. On the other hand, 9.5 percent of the 148 lethal events result from rivalry over a particular woman. Many such cases involve a woman deciding to leave her husband for another man or a man attempting to seduce another man's wife. Such cases, contra Pinker's assumptions, have nothing to do with raiding or warfare. For example, in an Aweikoma case, "Kovi [the husband] kills Nduicha [his wife's lover] with an axe as Nduicha bent over to cut him a piece of meat," and in a Tiwi case, "a man desired the wife of another man, so he sneaks up and kills the husband, which also was his 'brother' from another clan" (Fry and Söderberg, 2013b, pp. 18, 28).

Table I Pinker's (2011) assertions compared to actual reasons for nomadic forager killing in a sample of 21 societies as reported in Fry and Söderberg (2013a, b)

<i>Pinker's reasons</i>	<i>Reported reasons</i>	<i>Percentage</i>
Territory	Borders/resources	1.4
Livestock	Stealing cattle	3.4
Fight over women	Fight over a <i>particular</i> woman	9.5
To kidnap women from a neighboring "village"	Theft of women from a neighboring group	0.7
Raid for other reason and take women	To steal guns/over a woman	1.4
	Revenge against a <i>particular</i> killer(s)	11.5
	Fight over a <i>particular</i> man	0.7
	Husband kills wife	6.1
	Within group execution	2.0
	Starvation cannibalism	1.4
	Accident	4.1
	Interfamilial vendetta	4.1
	Execution of outsiders (such as missionaries, explorers, castaways, and colonists)	4.7
	Miscellaneous interpersonal disputes ^a	22.3
	Miscellaneous intergroup disputes ^b	5.4
	Inter-clan revenge or some other inter-clan reason (the Tiwi only) ^c	18.9
	During a general fight (duel or expiatory rite – the Tiwi only) ^c	2.7
	Total	100

Notes: Nomadic foragers may kill on occasion but they are not warlike. Only five out of 13 reasons listed by Pinker are reported for nomadic foragers. In fact, Pinker's "fight over women" category is not strictly comparable to the cases classified as "fight over a *particular* woman," because Pinker is referring to inter-community raiding for women, whereas the typical scenario from the ethnographic data involves jealousy, adultery, or some form of love triangle. Additionally, at most 8.8 percent of the lethal incidences in the Table correspond with the necessary conditions of the "chimpanzee model" (Myth 3). See the text for discussion. ^aMiscellaneous interpersonal reasons include: over a man's daughter, stealing honey, an unjust transaction, defense of self or others, killing of dogs by magic, due to boasting, due to insult/taunting, to obtain the victim's liver for magical purposes, incest related, wife kills child to punish husband, suspected sorcery, and reasons unspecified for the interpersonal dispute. ^bMiscellaneous intergroup reasons include to avenge suspected sorcery and cases where there was insufficient information to classify. ^cThe one society of the 21 in the sample wherein inter-clan revenge and other inter-clan reasons are central reasons for killing is the Tiwi of Australia. See Fry and Söderberg (2013a, b) for further discussion of the Tiwi as an unusual case

Contra Pinker's assertions, nowhere in the actual data for the 21 societies are found instances of lethal raiding for trophies or coups, food caches, water holes, hunting grounds, river access, flint, obsidian, salt or ochre, or to gang rape or claim betrothed women. There are very few cases of cattle raiding (five cases, all involving one society, the Hadza), resource defense (two cases, among the Vedda), and theft of women from neighboring communities (three cases, among the Botocuda, Aweikoma, and Tiwi). This shows a meager degree of agreement between the actual nomadic forager data and Pinker's assertions about raiding. Nomadic foragers do not actually raid neighboring communities very much at all.

Wrangham and Glowacki (2012, p. 11) return to an Emberesque definition of war, which matches-up human behavior with observations of chimpanzee coalitions attacking a lone member of a neighboring community. They conceptualize war in humans as when "coalitions of members of a group seek to inflict bodily harm on one or more members of another group; 'groups' are independent political units" (2012, p. 8). It is interesting to note that killing is no longer considered a necessary condition of war. This seems to us that such a definition is out of step with virtually all conceptualizations of war, which require lethal aggression to be inflicted upon one community by another.

Bearing in mind the valid point that how war is defined will affect whether or not a society is considered to practice it, Fry and Söderberg (2013a, b) considered every instance of lethal aggression in a sample of nomadic foragers without a priori attempting to classify the lethal events as homicide, feud, or war. Our conceptualization of war does require lethality, which seems to us a standard and reasonable aspect of the war concept. The idea was to report the actual characteristics of each lethal event without getting waylaid by definitional debates. In that the definition of war used by Wrangham and Glowacki (2012) as well as virtually all definitions of war require that multiple persons attack another community, the fact that a majority (55 percent) of the lethal events involved only one person killing one person immediately eliminates these lethal actions from the realm of warfare (Fry and Söderberg, 2013a, b). Likewise, killing within a community (or within a dependent political community, to use Wrangham and Glowacki's wording) is not war.

In consideration of the numbers of perpetrators, the relationships between killers and victims, and the motivations of the assailants, Fry and Söderberg (2013a, p. 270) report that "overall, the findings suggest that most incidents of lethal aggression among MFBS [Mobile Forager Band Societies] may be classified as homicides, a few others as feuds, and a minority as war." The sampling and methodology of the study were expressly designed to minimize the possibility of sampling bias, self-selection of ethnographic sources, and other possible procedural shortcomings, and the methodological procedures as well as the specific cases are published online (Fry and Söderberg, 2013b). The results show that the assertion that nomadic foragers are prone to wage war, although having gained a reputation of mythic proportions, is nonetheless false. In fact there are numerous reasons why the nomadic forager type of social organization makes the waging of war very difficult. Nine such features have been enumerated (Fry and Söderberg, 2013b).

Myth 2: there was a high rate of war mortality in the Pleistocene

Bowles (2009) suggests that over the long course of human evolution, warfare was frequent. In support of this contention, he first presents archaeological examples of killings. With only one exception, all these cases of war mortality are within the last 10,000 years and hence do not relate to the Pleistocene (Fry, 2013; Ferguson, 2013a, b). Second, Bowles (2009) considers eight ethnographic cases that were hand-picked, not randomly selected. Eight cases, of course, constitute a very small sample. Furthermore not all eight of the societies are nomadic foragers. A moment's reflection might elicit healthy skepticism that any meaningful conclusion about Pleistocene war mortality could follow from such a research design.

For two of the eight societies, the Ache of Paraguay and the Hiwi of Venezuela/Colombia, all the deaths used to estimate "war mortality" in the Pleistocene entail foragers being exterminated by frontiersmen and ranchers. Hill and Hurtado (1996, p. 48) write that "the Ache were relentlessly pursued by slave traders and attacked by Paraguayan frontiersmen from the time of the

conquest right up until peaceful contact.” Hill and Hurtado (1996, p. 52) explain that, “Most mention that the frequent hostile encounters with Paraguayans in the forest had driven them to desire a peaceful relationship with their more powerful neighbors.” Every single killing that Bowles (2009) uses to calculate Ache warfare mortality is recorded by Hill and Hurtado (1996, table 5.1, pp. 171-3) as “shot by Paraguayan.”

The Hiwi situation matches the methodological weakness of the Ache case for estimating Pleistocene war mortality. The *criollo* ranchers were massacring the Hiwi in order to grab up their land (Hill *et al.*, 2007, pp. 451-2). The ethnographers (Hill *et al.*, 2007, p. 444) explain how ranchers had been invading Hiwi land and, for example, how “members of the study population described here were victims of the ‘Rubiera Massacre’ carried out on a Columbian ranch on Christmas Day, 1968, which resulted in the deaths of 16 men, women, and children.” Each and every one of the so-called Hiwi “war deaths” used by Bowles (2009) to estimate war in the Pleistocene consisted of indigenous Hiwi who were murdered or massacred by nationals.

Sometimes Hiwi killed other Hiwi, but such killings were not used by Bowles because he could not determine which took place within a group, and hence were homicides, and which might have been intergroup events. As Hill *et al.* (2007, pp. 451-2) summarize for the Hiwi-killing-other-Hiwi cases: “Most of the adult killings were due either to competition over women, reprisals by jealous husbands (on both their wives and their wives’ lovers), or reprisals for past killings.” The central point is that the only so-called war deaths counted by Bowles to estimate Pleistocene war mortality were those in which indigenous people were murdered or massacred by Venezuelans (Bowles, 2009, using the data in Hill *et al.*, 2007, table 4, p. 450).

Other methodological, mathematical, and sampling issues with the Bowles’ (2009) study are discussed in detail by Fry (2013). If war mortality is recalculated removing the Ache and Hiwi deaths because they are due to genocidal attacks inflicted upon, not by, these forager societies, the overall percentage of war mortality for the societies in Bowles’ (2009) sample is reduced to 9 percent, down from 14 percent. But even this 9 percent figure must be re-evaluated in light of the fact that not all eight cases are nomadic foragers, the societies were hand-picked, and other problems exist (Fry, 2013). The question could be raised that since the Bowles (2009) study is so misleading, should it be retracted? Unfortunately Pinker (2011) has republished Bowles’ (2009) numbers on this sample of eight and thus the contention that war mortality during the Pleistocene was very high has received wide dissemination, while a more in-depth approach suggests the contention to be questionable at best.

Myth 3: the nomadic forager data support the “chimpanzee model” of lethal raiding psychology

Prompted by field observations that chimpanzees at times attack and kill members of neighboring groups, Wrangham (1999) has put forth a series of propositions about human aggression in the chimpanzee model (see also Wrangham and Peterson, 1996; Wrangham and Glowacki, 2012). Over the years, the model has evolved. In early writings (Wrangham and Peterson, 1996), the existence of non-warring societies was denied but more recently peaceful societies have been to some degree acknowledged to present an important challenge to the chimpanzee model (Wrangham and Glowacki, 2012). Previously, Wrangham (1999) advocated the existence of specific psychological mechanisms for coalitional lethal aggression such as “the experience of a victory thrill, an enjoyment of the chase, a tendency for dehumanization [...] ready coalition formation, and sophisticated assessment of power differentials,” but more recently he and a co-author state “whether humans have evolved specific psychological adaptations for war is unknown” (Wrangham and Glowacki, 2012, p. 5).

In any case, Wrangham and Glowacki (2012, p. 7) propose that “both chimpanzees and humans evolved a tendency to kill members of other groups in safe contexts.” Note the word tendency. “Selection has accordingly favored male tendencies to search for and take advantage of safe circumstances to cooperate in killing members of neighboring rival groups” (Wrangham and Glowacki, 2012, p. 6). We suggest that the idea that the chimpanzee model elucidates human behavior is in the realm of myth for the model is out of sync with many lines of data including the nomadic forager data.

If humans did have tendencies to attack members of other groups, then nomadic foragers should manifest such behavior with some regularity. The word tendency, after all, means to be prone or predisposed to think or act in a particular way. Without applying a systematic sampling procedure, Wrangham and Glowacki (2012) simply choose cultural examples and quotations to illustrate different types of hostility and violence. Listing bellicose cases is hardly an adequate test of a hypothesis about human tendencies.

The chimpanzee model also specifies that coalitions of males from one group readily cooperate to attack one or more individuals from another group. Granted, humans readily cooperate. Nomadic foragers cooperate in child-rearing, hunting, gathering, and a plethora of daily camp and household tasks. They also sometimes cooperate during fights (Fry and Söderberg, 2013a, b). However, it is as fallacious to conclude that cooperation evolved solely for war-making as it would be to conclude that human speech evolved solely for shouting threats.

If we turn back to the data, first, the finding that 55 percent of lethal events involved only one perpetrator killing one victim clearly shows that much lethal violence that occurs under the auspices of nomadic forager social organization has nothing to do with coalitions of cooperating males. Additionally, it can be noted that one society alone, the Tiwi of Australia, accounted for 47 percent of all killings (Fry and Söderberg, 2013a, b). For the unusually violent Tiwi, much of the mayhem involves strings of revenge killings among related clans of the same society. If this exceptional and unusual Tiwi case is removed from the analysis, then the percentage of lethal events with one perpetrator and one victim increases to 64 percent for the other 20 nomadic forager societies. The evidence-based conclusion is that most killings are individual affairs, not coalitionary deeds, at this nomadic band level of social organization. This conclusion is also reflected in the fact that ten out of 21 societies in the sample had no cases whatsoever that involved more than one killer. For these ten societies, one could argue that the data, instead of reflecting a tendency for males to form coalitions for lethal violence, actually reflect an aversion on the part of males to form such coalitions since all killings in these ten societies, if any, were perpetrated by lone individuals.

Next we can ask: How typical is intergroup killing by coalitions, or in other words, by more than one perpetrator? To get double-usage out of Table I, a tendency to attack and kill members of neighboring communities might be reflected in some of the lethal events listed in Table I as involving "borders/resources," "executing outsiders" (such as missionaries or explorers), and "miscellaneous intergroup disputes." Simply adding up the percentages for these types of killings yields a mere 11.5 percent of all lethal events for these 21 nomadic forager societies. This low percentage is not particularly supportive of the chimpanzee model's hypothesis that human males have a tendency to cooperatively attack members of neighboring groups. To the contrary, a more reasonable interpretation would be that human males have an aversion to attack members of neighboring groups.

To take the analysis one step further, the percentages reported in Table I show that most reasons for killing are very personal, involving sexual rivalries, jealousies, quarrels, and vengeance as well as in-group executions, accidents, wife-killings, and revenge-based feuding, not a generalized hostility toward or inclinations to attack neighboring communities. And if we next count up the number of attacks on members of other communities that simultaneously involve multiple perpetrators (i.e. possible coalitions), the summation is only 8.8 percent of the 148 lethal attacks (see Fry and Söderberg, 2013b, table S3). In other words, a mere 8.8 percent of all lethal incidences might reflect the two basic conditions of the chimpanzee model: that action will be undertaken by cooperative coalitions and that attacks will be directed at members of other forager societies. By definition, a tendency is an inclination, a predisposal, or a propensity. Evidence supporting a chimpanzee model of nomadic forager raiding and warfare is simply lacking.

Wrangham and Glowacki (2012) make the argument that only nomadic foragers living next to different nomadic forager societies are appropriate to consider in evaluating the chimpanzee model. Whereas this might sound like a good point in principle, we note certain methodological concerns regarding how Wrangham and Glowacki (2012) make this case.

First, parallel to the way Bowles (2009) self-selects eight cases, Wrangham and Glowacki (2012) cherry pick six examples of nomadic foragers living in contact with other forager societies.

To say this in another way, simply choosing cases to illustrate a model leaves a lot to be desired and is no methodological match for using the SCCS, which was set up by previous researchers, to reflect the cultural provinces of the world and for using precise criteria to define the sample (e.g. that societies must be nomadic or semi-nomadic and obtain at most 5 percent of their subsistence needs from animal husbandry or agriculture) as done by Fry (2006) and Fry and Söderberg (2013a, b).

Furthermore, against the ethnographic backdrop of known cases of adjacent forager societies living in peace with each other, this self-selection of six cases by Wrangham and Glowacki (2012) with “ambushes and raids” or “shoot-on-sight” policies can be seen as a biased representation. For instance, ethnographic cases of forager communities living in proximity to one another but that lack raiding, ambushes, feuding, or “shoot-on-sight” practices include the nomadic foragers of central peninsular Malaysia such as the Batek, Chewong, and Jahai (Endicott and Endicott, 2008, 2014; Endicott, 2013; Howell, 1989; Sluys, 2000), the Montagnais, Naskapi, and East Main Cree bands of Labrador, Canada (Lips, 1947), and the neighboring South Indian forager societies described by Gardner (2013). The point is that selecting six ethnographic examples, all of which are violent, is not representative.

A second concern regarding the six cases presented by Wrangham and Glowacki (2012) is the reliance in some of them on secondary sources in place of primary ethnography. We also note that the region labeled “Canada/Great Lakes” is huge and in the ethnographic passages quoted, reference is made to Chippewa, Sioux, Eskimos, Cree, and Iroquois. Furthermore, it is unclear which Canadian Cree society (e.g. Attawapiskat Cree, Waswanip Cree, Mistassini Cree) is being considered. Moreover, the fact that Wrangham and Glowacki (2012) provide examples of hostilities with non-nomadic foragers such as the equestrian Sioux and the horticultural Iroquois contradicts their goal to consider only nomadic forager societies.

A third concern is the underlying assumption that simply pointing to examples of nomadic forager warfare actually supports the specific proposals of the chimpanzee model that natural selection has favored “a tendency to kill members of neighboring groups when killing could be carried out safely” (Wrangham and Glowacki, 2012, p. 5). Merely citing some examples of nomadic forager-raiding and killing does not demonstrate that evolved tendencies are the underlying drivers of such behavior. Such evidence is insufficient.

Myth 4: contact and state influence inevitably decrease aggression in nomadic forager societies

Ember and Ember (1997) imply that ethnographically reported violence among nomadic foragers would have been even higher if not for the pacification processes of colonialism and the arrival of state authority. Pinker (2011, p. xxiv) constructs a similar argument asserting that the nomadic forager past as well as more recent tribal periods of prehistory were plagued by “chronic raiding and feuding that characterized life in a state of nature.” We do not disagree that the arrival of state control ultimately can decrease internal conflict. That can happen (Fry, 2006). However, that is not the complete story. As Bodley (1999, p. 465) points out, “The colonial encounter experienced by hunter-gatherers was a human disaster of genocide, ethnocide, and ecocide [...]”. Similar processes have occurred prehistorically as well. Ferguson and Whitehead (1992) document how the advance guards of state expansion, whether ancient or modern, can create a conflict-laden “tribal zone.” States did not always arrive and pacify previously warring foragers; more often than not, the disruption at contact caused by expanding state influence (e.g. during the colonial period), and continuing with advancing globalism, foment conflict and violence as indigenous peoples are displaced and annihilated. Some of Wrangham and Glowacki’s (2012) quotations certainly reflect this type of violence. We also have already seen examples of this phenomenon with the Ache and the Hiwi cases (Hill and Hurtado, 1996; Hill *et al.*, 2007). As Guenther (2014) illustrates and Bodley (1999) emphasizes, nomadic foragers sometimes took up the spear against the invaders (see also Hill and Hurtado, 1996). Our point is that the assertion, regularly made, that pre-contact nomadic foragers were more warlike than extant nomadic forager societies is too simplistic and in many cases certainly mythical (Guenther, 2014).

A specific aspect of contact, among others, that has generally been ignored by those making the “state-brings-peace” argument involves alcohol. Contact can introduce alcohol (Eaton and Eaton, 1999; Tonkinson, 2013). Aside from common knowledge that alcohol can contribute to aggression, this link is established scientifically (e.g. Bushman and Cooper, 1990; Chermack and Giancola, 1997; Exum, 2006). The connection between alcohol and aggression has been specifically noted for nomadic forager societies (Butovskaya, 2013; Griffin, 2000; Headland, 1989; Tonkinson, 2013). Tonkinson (2013, p. 274) explains that alcohol introduction among the Mardu of Australia resulted in a huge increase in injury and death due both to fighting and drunk-driving. Headland (1989) reports that alcohol figured into 50 percent (or 19 of 38) homicides among the Casiguran Agta of the Philippines. Kent (1989) documents how Basarwa Khoe-speakers from Botswana, once relocated into settled communities, took up drinking with a corresponding increase in fighting.

Of the lethal events reported by Fry and Söderberg (2013a, b), at least six were associated with alcohol intoxication in six different nomadic forager contexts. For example, Whiting (1950, p. 63) tells of how a Paiute husband accidentally killed his wife: “Clara philandered while he was away and contracted gonorrhoea. [...] He was drunk at the time and Anne told Clara not to pay any attention to him. He got angry and drew a gun on Anne. A struggle ensued and he accidentally shot and killed Clara while trying to shoot Anne.” (Introduction of guns is of course another feature of contact.) Not all alcohol-associated violence results in killings. An ethnographic account for the Kaska of Canada, one of the 21 nomadic forager societies in the Fry and Söderberg (2013a, b) sample, states:

Any overt expression of hostility in quarrels and in-group violence is rare. When people are sober there is consistency between ideals and behavior so far as the control of aggression is concerned. [...] As alcohol is understood as causing most aggressive behavior, there is a feeling that individuals prone to violence are not good drinkers (Honigmann, 1949, pp. 156, 157).

And a description from the 1600s pertaining to the Micmac by Denys (1908, p. 444) reads:

[...] and since they have frequented the fishing vessels, they drink in quite another fashion. They no longer have any regard for wine, and wish nothing but brandy. They do not call it drinking unless they become drunk, and do not think they have been drinking unless they fight and are hurt. However, when they set about drinking, their wives remove from the wigwams the guns, axes, the mounted swords (spears), the bows, the arrows, and (every weapon) even their knives, which the Indians carry hung from the neck.

In short, instead of assuming that the arrival of the state only decreases violence (e.g. Pinker, 2011), a more realistic approach is to look at the how indigenous societies have been affected by a multitude of conflict-decreasing and conflict-promoting factors since contact, of which exposure to alcohol with its link to violence is but one of many negative influences.

Conclusions

One reason that the main myth about nomadic foragers – that they are a war-prone breed – continues to be retold with gusto is that it corresponds with a widespread Western Hobbesian view of humanity. The myth affirms that humanity, especially male humanity, is a nasty lot, always has been, always will be. It is just human nature.

The myth, we suggest, also justifies militarism. If natural selection has produced a human primate with a tendency to attack neighbors when risks are low, well let’s forget the negotiating table and arm to the teeth. Let us stick it to them before they stick it to us.

Human beings obviously have capacities both for making war and for living in peace. The ethnographic and archaeological data support the conclusion that the nomadic bands of the Pleistocene were not warlike. Nomadic forager studies suggest that some killings occurred from time-to-time, but proposals that humanity’s ancestors evolved tendencies to attack neighboring groups and had high rates of war mortality are merely mythical caricatures detached from the data.

In closing, we wish to draw attention to a rather unusual phenomenon. The myths we have been discussing, rather than reflecting debates within hunter-gatherer studies, instead for the most part are proposed by persons outside the field. The main proponents of the myths are not trained

as ethnographers and are not forager specialists. Samuel Bowles is an economist. Steven Pinker is a psychologist. Richard Wrangham is a primatologist. The list of non-anthropologists who assume nomadic foragers to be “warlike” is substantial (e.g., Gat, 2006; Ghiglieri, 1999; Goldstein, 2001). In science, one’s training, experience, and knowledge do matter. When persons who lack anthropological training and lack ethnographic knowledge about foragers propose theories and explanations, it is not surprising that the outcome is closer to myth than reality. We recommend that anyone interested in nomadic forager war and peace listen to what nomadic forager researchers have to say about these topics.

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