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# Women and Warfare: How Human Evolution Excluded Women

Brett Kennedy

*Abstract: In 1983, David B. Adams published “Why are there so few Women Warriors?” This important paper brought to light the traditional conflict between marriage and war. Going against the classical “men are more aggressive” theory, Adams presented the conflict of interest a wife might experience in a patrilocal, exogamous society that would necessitate her removal from the warfare complex. However, even in those societies that there is no conflict of interest, the woman warrior is almost unheard of. Furthermore, even within those societies that allow women to participate in war, they are always the rarest exception. To answer this problem I will attempt to construct a prehistory of war, founded on recent works by a number of anthropologists, such as Barbara Smuts, Richard Wrangham, and psychologist Anne Campbell. These researchers have shed new light on the development of pair bonding, the pre-human history of warfare, and gender differences in aggressive behavior, respectively. Using these perspectives, and those of other recent research, this paper will revisit Adam’s model for women’s exclusion from warfare. By reconsidering Adam’s model, it attempts to apply the concepts to modern warfare, and women’s increasing participation in the world’s state militaries.*

## *Introduction*

*A man would be thought a coward if he had no more courage than a courageous woman. (Aristotle in *Politics*, trans. Jowett 1943 in Browne 2001)*

In classical anthropology it was thought that women were excluded from warfare because they lacked the basic ‘aggressive instinct’ which allowed men to be successful in war (Lorenz 1966). David B. Adams’ paper, “Why are there so few Women Warriors?” (1983) was an important alternative explanation to why women, more or less cross-culturally, do not engage in warfare. Having done his own

research on the existence of aggressive tendencies in males over females, Adams concluded that there is no such instinct, so there must be other reasons why women are so universally excluded from warfare. Basing his conclusions on his own cross-cultural research, along with the research of William Divale, Marvin Harris, the Embers and others, Adams discovered that in societies that practice exogamous marriage, patrilocal post-marital residence, and experience internal war or feuding, women never participated in warfare. Adams argues, “Women do not go to war because there is an historical contradiction between the institutions of warfare and marriage” (1983). The issue Adams presents is the conflict of interest warring creates for the wives of men in exogamous, patrilocal societies. In these societies warfare is often between groups that exchange women, and therefore if women did participate, they could end up fighting their brothers and fathers (Ibid). This conclusion gave insight into how marriage and warfare can present a sort of cultural contradiction.

While there can be no doubt that Adams’ research came to a valuable and relevant conclusion, there are many questions that he leaves unanswered or at least answered unsatisfactorily. Many societies do practice exogamy and patrilocal residence; however there are also those that do not. In these groups (e.g. a matrilocal society that marries endogamously, and practices exclusive external warfare) there would be no contradiction to keep women out of warfare. Although Adams does show that some of these groups *are* the only ones with women warriors, a very limited number of women actually participate, and in those that do, the women warriors’ participation is extremely limited.

### *Adams’ “Women Warriors”*

Adams’ analysis, though valid, has a number of systematic flaws. First, he never really defines exactly what a woman must do to ‘participate’ in warfare. In his study, Adams used the Human Resource Area Files and the Ethnographic Atlas to discover which groups have women who participate in warfare (1983). By looking at the nine cultures that he classifies as having “women warriors,” one can easily see that the definition Adams is working with is quite broad, perhaps to the point of dysfunction. Unfortunately, these societies that he places into the “women warrior” category have little ethnographic information on them, and the sources he used were primarily anecdotal and lacked any quantitative data. Table 1 lists the cultures that Adams stated as having women warriors; most of the ethnographies used to make this table were the same used by Adams. But even relying on

these questionable sources, it is obvious that within these groups, the participation of women in warfare is incredibly varied. Based on the differences in participation between groups which supposedly allow “women warriors” it seems that Adams has not decided on what exactly

Table 1

Society	Ethnographic Quote
Comanche	“men...might each take along a woman to help with their equipment, but they seldom exercised this privilege.” (Wallace and Hoebel 1952: 253)
Crow	“There are memories of women who went to war.” (Lowie 1935: 215)
Delaware	No Ethnography Cited
Fox	“When foes were killed their bodies were brought over and the women were made to strike them. These women are those whom they call warrior women.” (Michelson 1937: 66)
Gros Ventre	“While it was considered within the proprieties for women to go out and count coups on the enemy fallen near camp, they didn’t approve of women chasing off on horseback to ‘hit the enemy’.” (Flannery 1952: 183)
Maori	“Women were left behind when war parties sought blood vengeance.” (Vayda 1960: 41)
Majuro	“Women take part in war...although in the minority.” (Erdland 1914: 93)
Navaho	No Ethnography Cited
Orokaiva	“It was customary for women to accompany the [war] expedition carrying pots of food; and they might even stand behind their husbands as armor bearers.” (Williams 1939: 164)

qualifies as ‘women’s participation’. One can simplify this conundrum as follows: because these cultures were the only ones in the Ethnographic Atlas and the HRAF that Adams (1983) tested as having

‘women warriors,’ and in none of these societies are women found to participate in warring on an equal level as men, it is prudent to say that no group in the world has women who participate in warfare to the same extent as men. Therefore, I conclude that the “woman warrior”, using this definition of equal participation, does not exist.

Why, even in those societies with no apparent contradiction between marriage and warfare, is women’s participation so limited, or completely non-existent? To answer this, Adams creates a prehistory of warfare based on the research that was conducted up to the early 1980’s. However, since then there have been significant advances in the understanding of the development of warfare, gender differences in aggression, and the evolution of the pair bond (marriage). This new research can be used to create an updated prehistory of war—one that helps further understanding of how warfare developed, and why women have been left out of it.

Another deficiency I find in Adams’ paper is at the very end of his ‘prehistory of warfare.’ He qualifies his conclusions with, “the question of warfare and social structure in cultures with state structures is beyond the scope of the present analysis” (Adams 1983). Perhaps at the time of this publication, this was true. However, more recent research may be applied to the fundamentals of Adams’ model and used as a tool for understanding modern military gender conflicts. This paper will attempt to demonstrate that the fundamental contradiction between marriage residency and female participation in warfare that Adams studied is but one aspect of a larger complex of male domination, which developed very early in hominid evolution.

### *Understanding Male Dominance*

Adams presents the contradiction between marriage and warfare as having developed in a system that subjugates women through displacement from their natal group. Divale and Harris (1976), like Adams, studied warfare and marriage in a cross-cultural context. They discovered that through warfare, resource control, and other mechanisms, a “male supremacy complex” developed (Divale and Harris 1976). The marriage systems that Adams cites as the cause for women’s exclusion are but a small part of a systematic male dominance of prestate society. Divale and Harris (1976: 521) assert that “Post marital residence is closely associated with control over access to and the disposition and inheritance of, natural resources, capital, and labor power.” With this in mind, it is important to note that patrilocality is, by far, the most common form of post-marital residence in Murdock’s Ethnographic Atlas (Divale and Harris 1976). Even in matrilineal

societies where one would expect matrilocal marriage residence, the most common form of residence is avunculocality. These marital residence patterns alone suggest a high degree of male dominance, but what caused men to rise to the top of almost all social hierarchies?

*Male Cooperation and the Prehistory of Marriage and Warfare*

When Adams (1983) argued that women do not fight because of a contradiction between warfare and marriage, he was far more correct than he knew. The contradiction between these two social constructs is significantly more fundamental than post-marital residence systems. In fact, the very development of marriage may have been based on the human predilection for male dominance over women. In many evolutionary models, such as the one Adams uses in his prehistory (Adams 1983), marriage, or the pair bond, is generally assumed to have been created through the exchange of resources between the sexes. This research places a particular emphasis on males providing meat (Lovejoy 1981 cited in Smuts 1992). However, more recent studies on the effects of male coercion in human and non-human primates, suggest an alternative to the provisioning pair bond (Smuts 1992). There can be no denying that humans are an especially cooperative species; in particular, human males are prone to group activities (warfare, hunting, etc.). Barbara Smuts (1992: 10) explains, “we know that at some point during hominid evolution, male cooperation became increasingly important.” As cooperation intensified, there must have been give-and-take between the more dominant males and the lower ranking ones who cooperated with them. In humans, this probably forced dominant males to allow others to have mating privileges (Smuts 1992).

As cooperation becomes more intense in hominids, so too would the association between a particular male and a particular female, or females. Because of the necessity of male cooperation, the other males in the group respected these male-female pairs and their respective children. This benefited males insofar that it reduced the reproductive variance of lower ranking males, while allowing the dominant ones to maintain greater fitness (though their direct number of mates would decrease, the paternal certainty and child survivorship would increase) and still have the cooperation of the lower males. In this pair bonding scenario, a female and her offspring benefited from the protection of a male and his allies against any other males (Smuts 1992). Because it is the female who benefits from protection, and the male bond that allows for this protection, it only makes sense that the

ingroup males who are bonded to each other would protect their group from outside forces.

The development of pair bonding through male cooperation that Barbara Smuts suggests makes sense. However, unclear still are the factors that caused the “increased male cooperation” (Smuts 1992) that is requisite for the pair bond. Also, why was it necessarily male cooperation instead of female cooperation that developed to form this bond?

### *Chimpanzee Warfare*

*The invention of weapons...transformed the noisy, but seldom lethal, territorial displays and attacks against strangers into deadly encounters that could be called true warfare.* (Adams 1983)

Warfare is one of the primary actions that make male cooperation in humans necessary. It seems correct to hypothesize that intensifying warfare was perhaps the trigger that caused the increase in male cooperation necessary for the pair bond. We are not the only group that participates in this deadly activity. To understand the context and the cause for warfare in pre-modern humans, chimpanzees seem a logical precursor. Though the concept of coalitionary violence in chimpanzees is somewhat controversial, the work of Richard Wrangham (1999) seems to be supported by strong data and fits quite well into the prehistory of warfare being constructed here. In his research of warfare (coalitionary killing) in chimpanzees, Wrangham studied the cause and effects of their violent power struggles. Chimpanzees, like humans, are a male bonded society in which males collectively patrol, hunt, and attack other groups (see Purzycki, this volume).

The “imbalance-of-power” theory suggested by Wrangham (1999) indicates that the development of coalitionary violence in chimpanzees stemmed, like many social structures, from a combination of culture and environment. The two greatest contributing factors to chimpanzee participation in coalitionary violence are: (1) chimpanzees are a male bonded group and (2) there is differentiation in chimpanzee group size and access to resources, which may cause differences in group size. In this intergroup competition, large, powerful groups may raid and conquer groups that have fewer numbers, thus increasing their access to territory, and possibly further increasing their group size by removing females from conquered groups (Wrangham 1999). With chimps, like humans, females very rarely take any part in territorial patrolling and raiding (Wrangham 1999). In considering Wrangham’s

work, it can be seen that warfare is definitely not a human construct, and developed long before the invention of weapons, contradictory to what Adams (1983) supposes in his prehistory.

### *Warfare in Early Humans*

The imbalance of power theory and Wrangham's (1999) study of chimpanzee aggression show that warfare likely existed prior to the development of the human pair bond. Chimpanzees, like humans, constitute a male-bonded society that participates in warfare; however, they do not form pair bonds. This means that warfare was not the sole cause for the increased male cooperation that Smuts (1992) suggests. Still unknown is the human factor that necessitates the amount of male cooperation required for the pair bond to exist.

Equally apparent as the increased male cooperation is the increased human population in our history. However, it cannot be denied that there has always been competition within human populations and this, perhaps, is what necessitated an increase in male cooperation, which in turn necessitated the development of the pair bond. According to Keeley (1996) there are three primary causes for warfare between and within populations: (1) when boundary zones are present between populations, (2) when populations experience times of economic hardship or low access to resources, and (3) there is at least one belligerent population in the area. In the chimpanzee populations that Wrangham studied, all three of these variables were present. Groups could gain dominance over others on their boundaries by exploiting their smaller group size (due to lesser access to resources).

For early humans, since the populations were increasing, the situations that caused warfare became more common, and neighboring populations constantly vied for resources and land. There was strident competition for women, both in- and out-group. Men developed group bonds, and those who did had considerably less reproductive variance and overall higher net fitness caused by more reliable paternity, mating opportunities, and protection of mate and offspring. Research has shown that population expansion is often a principal cause for increased warfare, especially of the internal sort, which is associated with male cooperation (Ember 1974).

### *Gender and Aggression*

*Women are excluded from warfare not so much because of sex differences in aggressiveness. (Adams 1983)*

David Adams began his research on marital residency and war because his previous research concluded that there are not satisfactory sex differences in aggression to explain women's exclusion from warfare (Adams 1983). Evolutionary psychologist Anne Campbell, however, has aggressively challenged this conclusion. Her research has found that the real difference in aggression between men and women is the expression thereof, not the amount (Campbell 1999). Her research can explain why it was men who started cooperating instead of women, leading to the development of Smuts' (1992) male cooperation based pair bond.

Campbell (1999: 204) expounds on Trivers-Willard (1973) saying, "in species where one sex makes a higher parental investment than the other, the higher investing sex is a resource for which the opposite sex competes." This is obviously true for humans; it has been shown cross-culturally that females invest more in offspring than males. It is this fundamental aspect of human biology that accounts for all of the differences that Campbell expresses in her research. The greater amount of investment a mother puts into a child means that she is more important to the child's survival, and therefore to her own fitness, than the father could be. Therefore, it would be advantageous for women to be more careful with their own lives (Campbell 1999). This is reflected in current research that she summarizes into four primary facts about male and female aggression: (1) males exhibit aggression more often than females after infancy, (2) the difference in expression of aggressiveness between the sexes increases with the severity of the aggression (e.g. an argument versus a homicide), (3) the difference between male and female aggression can be seen all over the world, (4) the difference between male and female aggression can be seen for all age groups (Campbell 1999).

In other words, men have a greater propensity for aggression because their fitness variance is higher than that of women. Therefore, the development of pair bonding can be seen as a way of reducing this variance in men because paternity certainty would be increased for those males who bonded to a particular mate, thereby helping to ensure consistent mating rights. However, it is not to say that intragroup competition would be eliminated; the dominant males would still be likely to mate more than the lesser males because their ferocity and aggressiveness would make them particularly attractive mates (Smuts 1992). However, dominant males' gross sexual opportunity would decline, but this would be balanced by increased paternity certainty and protection of offspring. Their individual fitness would probably stay the same or increase.

This brings to light another important aspect of male dominated warfare. Divale and Harris (1976) speculate that males who are physically aggressive have higher fitness and are likely to be more attractive than those who are not (for a discussion of the psychological aspect of mate-selection, see Schacht, this volume). The commonality of polygyny makes it obvious that, even in non-stratified societies, certain males are more attractive than others. Why would such aggressiveness in men be selected for in these groups? Such an adaptation would seemingly be cause for much disruption and violence within communities. However, if pair bonding did develop as Smuts (1992) suggests, then the more aggressive males would be better equipped to protect their females and perform well in warfare, which is necessary for male cooperation.

In prestate warfare, since most neighboring groups would have similar levels of technology, the only important discrepancy between sides in a battle would be numbers and the ferocity with which each side fights (Keeley 1996). So, in these societies that experience large amounts of warfare, males are far more selected than females in terms of infanticide (Divale & Harris 1976). In these groups the sex ratios at birth are skewed in favor of men, even though most of these groups practice polygyny, which seems to be counterintuitive. However, since there are so few women, men must compete with each other to have high fitness, which allows sex to be a kind of "reward" for men who do well in battle (Divale & Harris 1976). Therefore, expressing ferocity and aggressiveness would have two-pronged benefits for the fitness of a man: on the one hand, they would be more attractive to women, while on the other their male peers would respect them more and therefore further legitimize the bond they form with their mates.

The most obvious effect of this selection for aggressive and "brave" men can be seen in all kinds of combat. It is not uncommon for men to march directly into situations where their death is nearly certain. Walking into a situation that will almost definitely result in death seems to make absolutely no evolutionary sense, unless however, the alternative is almost equally important and the rewards are great. Because the cooperation that developed between men is so important to individual fitness, and since aggressiveness and bravery are attractive, fleeing from such a situation would make an individual a 'coward' losing the respect of ones peers, and ultimately reducing their attractiveness. Much in the same way that aggressiveness in battle would have two-pronged benefits, cowardice could have converse consequences. The peers of a 'coward' would lose respect for the individual and would be more likely to ignore his mating rights because the man is not lending to the war effort to the extent that they believe

he should. Also, because of this he could not offer security to his mate in the same way a “braver” man, whose peers would respect his mate and their children, could.

Women, on the other hand, would have considerably less fitness benefit from fighting in near certain-death situations. Because it is the male bond that is so important to the existence and legitimization of the pair bond, women would have far less to gain, and considerably more to lose. This is fundamental to women’s exclusion from combat. Perhaps not every combat situation leads death, but the risk exists, and women simply do not increase their fitness nearly as much as men do by participating in such a deadly affair.

### *The Modern Context*

Understanding that the cause for women’s exclusion from warfare runs much deeper than a conflict between exogamous patrilocal marriage residence and women’s loyalties, it becomes clear why there is so much resistance to the inclusion of women into combat roles in all modern state militaries. There can be no denial that the human condition and our methods of warfare, have changed incredibly within a state context. There are often great technology gaps between warring groups; due to the nature of this technology, such as long ranged weapons, the importance of individual ferocity in combat have lessened. However, the majority of early human existence has been in a social organization that involves the sort of warfare that often necessarily excludes women from combat. This is certainly reason to believe that people would resist such a drastic change to our social structure. Acknowledging that male cooperation (called unit cohesion in modern literature) was crucial in the development of marriage means that when this situation is challenged on a fundamental level such as warfare, social disruption is inevitable. However, it is not to say that this sort of disruption is necessarily bad; change itself has no positive or negative connotations. It simply is. The consequences of this change are the important part

Browne (2001) presents a modern perspective of much of what I have presented in the foregoing discussion. He discusses the effects women could have on male unit cohesion, the importance of the male tendency to be protective of women, and men’s great fear of cowardice. In fact, Browne presented further support for understanding male cooperation and warfare. He argues that male bonding is important on the very basic level of fighting because it develops a group mentality. No particular person wants to fight, but they must because that is what the group expects of them (Browne 2001). If a

man does not follow his peers' expectation, he could be excluded from the group's bond. This is relatable to the earlier discussion of how cowardice can negatively affect a man's individual fitness. Browne also explores the difficulty of women in leadership positions. As Campbell (1999) states, women historically do not generally pursue advancements in dominance hierarchies because the cost of direct physical confrontation is higher for them. This has led to women having developed a leadership style that is more empathetic and less confrontational—generally the opposite of what military leadership requires (Browne 2001). Browne makes his argument primarily against women being included in combat by insisting that, for a number of reasons, women in combat would reduce the efficiency of modern militaries.

Segal, on the other hand, also uses many of the same basic principles as Browne, but discusses why women *should* be included in modern military combat roles, should they so desire. She presents information on two tests that the military conducted--the MAXWAF and the REFWAF--to see if the inclusion of women in combat units would have any effect on their efficiency and ability to accomplish a task. According to these tests, no women in a unit had any effect on their ability to accomplish a mission (Segal 1978). However, it should be noted that there was no real threat of death in either of these tests (Browne 2001). Browne (2001) argues that because these test involved no actual threat of death, they were not realistic combat situations and could not really stress test the unit bond. Segal also used information from surveys given to service people, many of whom thought that women should be integrated into combat roles. Perhaps the dominance of males in warfare, like many other cultural aspects of prestate society, is ready to become a thing of the past.

Since Segal's study in 1978, there have been huge changes in the way the US military deals with the "gender issue." In 1991, in the wake of the Gulf War, congress passed legislation to allow women to take part in combat aviation, and one year later they were allowed on most naval vessels. Finally, in 1994 the "risk rule" that excluded women from high-risk combat support positions was repealed and instead, women were now only excluded from direct combat situations (Titunik 2000). Of course, it is those combat situations where the threat of death is most present, and in light of evidence displayed in this discussion and others, it is obvious why there is such a cultural struggle over this issue.

There can be no doubt that social structure has changed very significantly since the creation of state societies, but has this change been enough to allow for such a revolutionary revision of gender roles?

The development of pair bonding and many aspects of human culture rested on the cooperation of males. However, the practice warfare has undergone significant change with the development of state-level society and ever evolving technology. The percent of the population killed in warfare among state-level societies, compared to the prestate societies, is significantly lower (Keeley 1996). The way we wage war with long-range weapons and avoidance of hand-to-hand combat, affect the practice of war. In many situations, the very basis for warfare has changed; no longer is it limited to brief, but violent land grabs, and secret morning raids. There is no immediate or obvious answer to the difficult situation of military gender integration, but with continued consideration and research, perhaps there will one day be a compromise.

### *Conclusion*

Cross-culturally, whether in a prestate society or in a modern military, women are excluded from warfare. The uneasiness of modern militaries in allowing women into combat positions is based on not only a long history, but an even longer pre-history of men dominating warfare. In this discussion, I have attempted to explain that marriage itself is rooted in a system that favors male cooperation structures to control females, caused by intrinsic differences in the expression of aggressiveness between males and females. These differences are a result of biology; because women invest more in child rearing, their inclusion in warfare, especially in prestate contexts, makes little sense. Because of and in addition to this, they have far less to gain in the instances in which they do participate. This is why—even in those groups where Adams says women warriors exist—they are the most extreme exception and never participate on an equal level as men. If, as argued above, the pair bond did develop through a combination of male cooperation and protection of females due to fundamental biological differences between the sexes, then these two factors, which are intrinsic to male hegemony, warfare and women's exclusion therein, make it no small wonder that there are no societies in existence in which women participate in warfare to the same degree as men.

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