

WAR AND THE SEXES IN AMAZONIA

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Introduction

Conflict patterns of native Amazonians have special significance in the growing anthropological literature on war. The cause of these conflicts is hotly debated, with the key issue being whether limitations on the availability of game animals are responsible for generating competition and warfare (see Chagnon 1983: 81-89; Harris 1984; Sponsel 1983). I believe that game limitations are important, but they make up only one part of the infrastructural basis for war. Moreover, the theoretical focus on the causes of war has left gaps in our understanding of several important social patterns which can strongly influence the course of hostilities.

This paper considers some of those patterns, those involving aspects of social structure, particularly post-marital residence, in relation to the organization of work and of military forces. "Social structural explanations" are sometimes contrasted to "ecological explanations" of war. No contradiction of theory is necessary, and none is implied in this analysis. The arguments to follow are fully consistent with the view that wars result from conflict over scarce critical resources. The nature of those conflicts in Amazonia, and the ramifications of political organization and the impact of Western contact on Amazonian warfare, will be considered in other articles. Study from all these perspectives can be combined to achieve a more rounded, theoretically consistent understanding of war.

The article has four sections. The first reviews existing theory on the relation of social structural patterns to war, and considers these posited relationships against Amazonian cases. The second describes the relationship of kinship and gender distinctions to the organization of work. The third argues that production and conflict patterns together determine post-marital residence patterns. The fourth proposes that residence, production, and conflict combine to influence the significance

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in war of men fighting over women.

The starting point is Robert Murphy's early writings about Mundurucu warfare. Murphy (1957; 1960) posits functional relationships between certain aspects of kinship systems and warfare. These hypotheses have been developed by other researchers into a major body of theory in cross-cultural statistical studies, yet they are scarcely acknowledged in recent work on Amazonian warfare (cf. Martin 1969:256).

Kinship Structures and War

Murphy's 1957 article examines the interaction of social structure and social psychology in generating war. He argues that the Mundurucu combination of patrilineal descent with matrilineal post-marital residence generates tensions which cannot be released within the society without causing major social disruption. Prior to pacification, these pent-up hostilities found release in external aggression.

The psychological elements of his argument are criticized by Wilson (1958), and defended in a rejoinder by Murphy (1958). Nevertheless, the psychological aspect is much less prominent in *Headhunter's Heritage*. Instead of being the primary motivator for war (as in 1957: 1027, 1032), pent-up hostility is portrayed as a facilitating condition in wars fought initially to gain access to trade goods, and later as mercenaries for the whites. Internal tensions were vented in these wars, but did not cause them (1960: 30, 36-38, 130, 148-150, 186). This position is consistent with the generally accepted view on the psychological relationship between external aggression and internal solidarity (Ferguson 1984a: 13). It needs no further consideration here.

Murphy's observations on kinship patterns and the organization of war have been much more influential. Drawing on Simmel and British structural-functionalism, Murphy (1957: 1029-1034; 1960: 127-131; see also 1956) argues that matrilineal residence among the Mundurucu requires suppression of conflict and facilitates cooperation among men, because men of different patrilineal clans must live together in their wives' households. Grievances and latent factionalism persist, but their public expression is not allowed. Public harmony is maintained at all costs, since open conflict could activate patrilineal clan loyalties and oppositions, which would tear apart matrilineal households. As Mundurucu men marry outside their own village (1960: 85), the cross-cutting ties of residence and descent extend throughout their territory. That makes it possible to mobilize relatively large military forces, which can go off on long expeditions, since other men will remain at home with the female residential core to look after the warriors' interests. Murphy contrasts this with societies where patrilineality combines with patrilocality, encouraging "compartmental segmentation of the society along conjunctive lines of kinship and territory" (1960: 128). He proposes (1957: 1033) as a testable hy-

pothesis that matrilocal societies would be internally peaceful.

This hypothesis is the starting point of a cross-cultural study by Thoden van Velzen and Van Wetering (1960). They find it supported by available data. They then expand the argument to give greater attention to male factionalism, and find that "the mere presence of power groups [of male agnates] is sufficient to make a society non-peaceful" (1960:181). Their principal diagnostic of these "fraternal interest groups" is patrilocal post-marital residence. Matrilocal residence thus contributes to internal peace by eliminating the main basis of male factionalism. Subsequent research (Otterbein 1968; 1973; 1977; 1985; Otterbein and Otterbein 1965) confirms the association of fraternal interest groups with feud and "internal warfare" (i.e., war between communities in the same culture) in politically uncentralized societies.

The researchers cited in the preceding paragraph maintain that social structural patterns lead to conflict patterns. The causal direction is reversed by other researchers (Divale 1975; Divale et al. 1976; Ember 1974; Ember and Ember 1971; see Otterbein 1977 for a review of these and other work). They elaborate and test several hypotheses regarding kinship patterns and war, and affirm that it is conflict which has causal priority over kinship structure. Conflict between local competitors favors development of localized fraternal interest groups. Conflict over longer distances and with people outside one's own culture favors development of unifying cross-cultural ties, commonly through matrilocality.

Despite disagreement over this and a few other points (see Otterbein 1977: 702), the line of research initiated by Murphy's 1957 article has produced a remarkably consistent and well-documented body of findings. So it is a puzzling fact that these findings are so rarely acknowledged in writing on Amazonian warfare. One possible reason for this neglect is that the kinship patterns of Amazonian societies resist being sorted into the categories used by cross-cultural researchers. Standard concepts of descent often seem inapplicable (Maybury-Lewis 1979a: 305; Murphy 1979: 222-223; and see Kaplan 1975: viii, 184; Morey and Metzger 1974: 43; Needham 1964), societies which were once classified as unilineal have been reclassified as cognatic (Jackson 1975: 319), and it is entirely possible to argue over whether a given society (the Yanomamo) does or does not have lineages or unilineal descent (Chagnon 1967: 142-147; 1977: 65-70; Crocker 1969a: 742; Jackson 1975: 320; Kaplan 1973; Murphy 1979: 217-222; Shapiro 1972: 99-105; 1974; 1975; Taylor and Ramos 1975). Marriage is another complicated area. Amazonian patterns vary tremendously (compare Chagnon 1977: 54-65; Harner 1973: 93-97; Henry 1964: 29-47; Jackson 1983: 124; Levi-Strauss 1967; Morey and Metzger 1974: 73-78; Riviere 1969: 188-198), and theoretical debate on the topic is correspondingly dense (Chagnon 1977: 54-65; Kaplan 1975: 183-198; Kensinger 1984; Maybury-Lewis 1979b; Riviere 1969: 272-283). Although marriage practices are too complicated to even summarize here, it must be noted that they can have important consequences for the

significance of post-marital residence rules in conflicts. Post-marital residence itself also shows major variation even within single communities (Dole 1973: 295; Gregor 1977: 268-281; Hill and Moran 1983: 122-123; Kaplan 1975: 88-123; Leeds 1961: 24; Price 1981: 690-691; Wagley 1983: 94-95). (Variations in both native practices and ethnographers' terminologies lead me to disregard the distinction between uxorilocality and matrilocality proper, and to simplify this text by using "matrilocality" as a general term designating both patterns.) It is now widely recognized that an important general characteristic of Amazonian kinship systems is the ability of individuals to avoid or manipulate rules and relationships in pursuit of individual interests (Chagnon 1974: 89, 141; Dole 1983-84: 314-315; Gregor 1977: 360; Jackson 1975: 320-322; 1983: 71-72; Kaplan 1972; 1975: vii; Maybury-Lewis 1974: 168-169; Morey and Metzger 1974: 43-48). Because of this, characterizations of kinship patterns in discussions to follow should be taken to indicate dominant practices. Variations are to be expected.

Amazonian cases generally support the cross-cultural findings, although they also suggest some qualifications. On the matrilocal side, the Mundurucu of course fit expectations perfectly: matrilocality combined with external war and internal peace. So do the Tapirape (Wagley 1983: 39, 83-84, 93), the Siriono (Holmberg 1969: 157-159, 216-218) and the Tupinamba (Balée 1984b: 257). The generally matrilocal Guahibo of the Colombian-Venezuelan *Ilanos* make war on other Guahibo, but such conflicts are almost always between recognizable regional subdivisions, which otherwise have little contact. Within subdivisions, intermarriage, economic and military cooperation, and non-violent conflict resolution are the rule (Morey and Metzger 1974: 53-55, 99-102).

The Gê speaking peoples of the Central Brazil *cerrado* region are matrilocal (Gross 1979; Maybury-Lewis 1979b), and have extensive histories of external war against Westerners and other native groups (Friel 1985: 360; Nimuendajú 1946: 3, 149; Maybury-Lewis 1974: 1-12). Of these peoples, the Eastern Timbira fit the hypothesized pattern exactly, with an absence of internal conflict (Nimuendajú 1946: 149), but others -- the Shavante, Sherente, and Kayapó -- are plagued by violent factionalism and internal war (Maybury-Lewis 1974: 21-27, 210, 305-309). Maybury-Lewis (1974: 306) suggests that this contrast is because the Timbira alone do not have men's houses, which among the other Gê combine with an age set system to foster a bellicose attitude which is very prominent in factional fighting. But there is reason to question the central significance of men's houses.

The Bororo, so culturally similar to their Gê speaking neighbors, have men's houses but lack internal feuding and factional conflict. The Mundurucu also have men's houses (Murphy 1960: 105). Significantly, the Bororo also have strong matrilineal tendencies and very weak agnatic ties (Crocker 1969b: 238, 256). For the Timbira, matrilocal residence has "pervasive effects ... on the organization of many of the activities of daily

life," uncontested by the presence of any agnatic descent groups (Lave 1971: 342). The Shavante and Sherente, on the other hand, have patrilineal descent groups despite their matrilineal residence, and it is these descent groups which act as political factions (Maybury-Lewis 1971: 382-384). The Kayapó are somewhat anomalous (although not for Maybury-Lewis' argument). They lack patrilineal descent groups, and their political factions are assembled on a more ad hoc basis (Bamberger 1979: 133; Maybury-Lewis 1974: 303, 306; Turner 1971: 366, 370). I suspect that this anomaly, as well as some discrepancies between earlier and later descriptions of social organization of other Gé groups (Lave 1971: 342; Maybury-Lewis 1971) may be related to historical changes induced by Western contact.

A few theoretical implications can be derived from the Central Brazilian cases. First, that men's houses will foster factional conflict only if distinct male factions are already present. Second, that any tendency toward internal peace inherent in the cross-cutting ties of matrilineality can be overwhelmed by other contradictory social patterns. This is consistent with recent findings on conflict among the West African Metá (Dillon 1980). A third point is suggested by comparison of the Mundurucu with the Shavante. The village exogamy of the Mundurucu (Murphy 1960: 85) disperses men of a patrilineal far more than occurs among the village-endogamous Shavante (Maybury-Lewis 1974: 77-80; and see Turner 1979: 174). Shavante-style factional fighting is simply not possible under the existing distribution of Mundurucu males. This can be related to a recent analysis showing that exogamy per se is not associated with peace (Kang 1979). Elsewhere (Ferguson 1984a: 17) it is suggested that intermarriage is often "a strategy linking particular groups within a context of war." Kang (1979: 96-97) observes that exogamy is a typical pattern of fraternal interest groups, and argues that the nature of existing social groups must enter into any assessment of the peace contribution of exogamy. The point can be reversed: marriage practices can have important consequences for general patterns of military relations between variously structured social groups. The Mundurucu-Shavante contrast suggests that the tendency toward peace among matrilineal peoples will be stronger when local groups are exogamic.

On the other side of the pattern under review here, the Yanomamo groups described by Chagnon have been singled out as exemplifying the combative character of fraternal interest groups (Dillon 1980: 659; Otterbein 1973: 939). These Yanomamo are renowned for their internal conflicts and warfare, and it is true that the typical village is organized around a few groups of consanguineally related males (Chagnon 1977: 68-71). However, political conflict among the Yanomamo typically does not pit one group of classificatory brothers against another, as fraternal interest group theory suggests. The typical faction instead consists of divisions of two or more agnatic groups, bound to each other through an on-going arrangement of sister-exchange (Chagnon 1977: 70-72, 87-88; Shapiro 1972: 72, 87-90). Shapiro (cited in Jackson 1975: 322) suggests

that there may be a continuum of alliance types, measured by the relative weightings of consanguineal and affinal loyalties. This is an important finding for fraternal interest group theory, because it indicates that the correlation of patrilocality with internal fighting may result from different structural patterns of conflict.

Other patrilocal peoples are found in the Northwest Amazon. In the past, they carried on internal war (Jackson 1983: 71-79, 97). Goldman (1963) provides details about one somewhat anomalous Northwestern group, the Cubeo. The Cubeo were organized into ranked patrilocal sibs, within three patrilineal phratries (1963: 24-29). Their segmentary structure was adaptable to different levels of conflict (see Sahlins 1961). Individual sibs could carry on feuds, or phratries could unite in the face of more serious threats. The Cubeo also confronted military threats from surrounding peoples, although it is not clear that they all united to fight these enemies (Goldman 1963: 34, 45, 162-163). The Northwest peoples are cited by Turner (1979: 165) as he argues that virilocality has the potential to unite wider groupings than uxorilocality. The Cubeo support his point. This does not violate fraternal interest group theory, however, since the Cubeo had a relatively hierarchical and centralized political structure, and Otterbein's research (1985) demonstrates that such structures provide a new basis of military organization.

The ten tribes of the Upper Xingú are also patrilocal. But there, despite regular conflicts and some actual fighting, the general rule has been peace between the ten, and war against outside groups (Murphy and Quain 1955: 1-15; Villas Boas and Villas Boas 1973: 17, 28-33). It seems that in the face of constant danger from the outside, the peoples of the Upper Xingú developed an elaborate inter-tribal culture, which kept local conflicts from breaking into war and which facilitated defensive cooperation (Basso 1973: 133-153; Gregor 1977: 17-18, 309-318; Murphy and Quain 1955: 10-19; Nimuendajú 1963: 235-236; Villas Boas and Villas Boas 1973: 16). Since their defensive warfare rarely involved expeditions outside their own territory, it did not require the prolonged absence of large numbers of men, which is one of the factors argued to favor matrilocality in external war situations. The upper Xingú needs more study before its lessons will be clear, but it seems to suggest that, first, under the right circumstances, regional military integration of non-hierarchical societies can be achieved without matrilocality; and second, that fraternal interest groups will not lead to local war when there is a need and a structural basis for peaceful cooperation.

The Shuara Jivaro of the Andean foothills do not seem to fit either the patrilocal or the standard matrilocality pattern. There is a matrilocality residential bias, but individuals regularly move between loose neighborhoods of single households. This, combined with a flexible cognatic kin system, produces personal networks of relatives dispersed over very wide areas (Harner 1973: 78-80, 94-98, 107; Meggers 1971: 62). Other *montaña* peoples have similar patterns (Bennett Ross 1980: 49-50; 1986; Johnson

1983: 30). These networks can lead to a chain reaction of hostilities in feuds (Bennett Ross 1984: 96-105; Harner 1973: 39, 103, 180-183), but they also provide the means for mobilizing men from a wide area against a common enemy (Harner 1973: 17-25, 33, 115, 183-184). While this case is not easily classified, it does not contradict theoretical expectations. The cross-cutting ties created by the matrilocal tendency and kin dispersion aid in mobilizing large forces, but the absence of large, stable matrilocal households eliminates the need for strict suppression of conflicts between local men. The physical distance between households loosens affective ties between brothers (Harner 1973: 96), so the residence pattern certainly does not engender fraternal interest groups. But neither does it work against the formation of male factions.

Before moving on, it is worth noting that the fragmentary character of patrilocally organized societies is a relative thing. No fraternal interest group is an island. I will argue elsewhere that viable Amazonian societies (i.e., those not on a path to extinction) are characterized by crucial social relations between local communities. These are matters of functional necessity, and are patterned by political behavior. The most aggressive of fraternal interest groups typically will be constrained by a variety of ties to other local groups, and these may act to restrain some conflict. But the restraint will be *less* than with the stronger cross-cutting ties created by matrilocality, and the relative independence of the males of different groups will allow a conflict to develop between two communities without necessarily involving many other communities.

Kinship, Gender, and the Organization of Work

The cases described above support the posited relationships between aspects of kinship systems and conflict patterns, but they demonstrate that, in practice, the actual expression of these relationships is more variable and complicated than the theory indicates. Why these more complicated patterns exist is an interesting question, the answer to which may lie in the same direction as the answer to the question that divides the cross-cultural statistical studies, that is, do kin structures cause conflict patterns, or do conflict patterns create kin structures. To a degree, I will argue, both relationships exist: conflict and kinship are reciprocally conditioning. But there is also a third relationship partly responsible for the observed correlation. In this section I will argue that much of the correspondence of kin structures and conflict patterns, as well as the unexpected complications in these relationships, is because both are grounded in a more fundamental causal matrix -- both kinship and conflict are strongly conditioned by the exigencies of production and reproduction in a given ecological and social context. Ember and Ember make a similar argument using cross-cultural statistics, but the present argument differs from theirs in that they evaluate production in terms of the material significance of the product (1971: 572), and I will be looking at the organization of work effort (see Johnson and Johnson 1975; Murphy

and Murphy 1980).

The economic organization of Amazonian peoples did not receive much attention in the past. Only recently have researchers produced quantitative data on time allocation and on physical production, distribution, and consumption (Aspelin 1979; Berlin and Markell 1977; Dufour 1983; Flowers et al. 1982; Hill and Hawkes 1983; Hill et al. 1984; Hill et al. 1985; Hurtado et al. 1985; Johnson 1975; Kaplan and Hill 1985; La-Point 1970; Lizot 1977; Werner et al. 1979). Despite remaining gaps in our knowledge, it is perfectly clear that Amazonian economies are thoroughly embedded in the total social structure, and that the economic aspect is "a very pivotal part" of that total structure (Murphy and Murphy 1980: 181). It is also clear from both the quantitative and non-quantitative reports (Chagnon 1977: 81-85; Goldman 1963: 58,66, 121; Holmberg 1969: 103; Jackson 1983: 182-185; Kaplan 1975: 33-45; Murphy 1960: 66-68; Riviere 1969: 42-47) that the most important economic status distinctions in these societies are those of age, generation, and above all, gender.

Yolanda and Robert Murphy (1974) discuss in penetrating detail how differences of gender and other ascriptive statuses structure the division of labor and all of social life among the Mundurucu. Siskind (1973a) provides similar information for the Sharanahua. In a later article, Siskind (1978) develops these themes into a general statement on kinship and mode of production. She argues that gender and generation determine one's position in the economic order of societies such as these; that these distinctions are reflected in kinship systems; and that, in defining categories of individuals along with their rights and obligations to each other, the basic structure of kinship is the relations of production. Marriage brings together a full set of productive capabilities, enabling adults to subsist and to produce and socialize the next generation. Turner (1979: 162), in a complicated analysis of Central Brazilian social structures, takes a similar idea further, arguing that the finer details of kinship systems are superstructural reinforcers of the basic mode of production.

The content of the sex-based division of labor can be summarized as follows: In Amazonia, men hunt and fish (sometimes accompanied by women), they do most "construction work" such as erecting houses, clearing gardens, and making canoes, and they carry out military actions. Women are responsible for child care, and their other duties are those compatible with this primary task of biological and social reproduction (Hurtado et al. 1985: 2; Turner 1979: 154; and see Brown 1970). Typically, those duties are domestic work and tending of gardens, although there are numerous exceptions to both. Which sex gathers wild products varies greatly by product and by society. Any aspect of the division of labor could relate to patterns of kinship and conflict, but the discussion to follow will focus on a few of the more general and important aspects.

Bitter manioc is the principal cultivated food in most Amazonian societies, again with many exceptions. (Sweet manioc is prominent in the Andean foothills; maize dominates in several areas, the most significant of which may be among the peoples of the river floodplains before contact [see Roosevelt 1980].) The processing of bitter manioc to remove toxins and its subsequent preparation as food is a multi-phase operation with substantial labor requirements (Basso 1973: 33-34; Carneiro 1983: 96-99; Hugh-Jones 1978: 49-52; Jackson 1983: 50-54; Murphy and Murphy 1974: 123-127). This encourages a degree of autonomy and cooperation in women's work, which appears to set a floor for the relative status of women. Bitter manioc processing for domestic consumption can be easily accommodated within patrilocal households, but when larger quantities are needed for feasts or for trade, there is a tendency to develop larger female work groups (Goldman 1963: 52; Hugh-Jones 1978: 49; Jackson 1983: 58-59, 97). In some instances, where local peoples regularly produce manioc products for sale to Westerners, this has encouraged a shift from patrilocal to matrilocality (Hill and Moran 1983: 124-125; Murphy 1956: 427-431; cf. Ramos 1978). Another very important characteristic of bitter manioc as a staple is its reliability. Under normal circumstances, a household can count on their own gardens to produce enough of the crop to meet their needs (Carneiro 1983: 102; Leeds 1961: 23; Moran 1983: 131; Roosevelt 1980: 121, 139; cf. Milton 1984: 17-19).

The organization of men for hunting and fishing is somewhat more variable. The most common pattern is for either to be done alone, or in groups of two to four. However, larger teams may be frequent when a group is preparing for a feast, or when the yields of solo hunting decline; and some fishing techniques, such as stream poisoning, always require larger cooperative groups (Basso 1973: 38-39; Beckerman 1983: 270; Flowers 1983: 361-369; Hames 1983: 399-401; Harner 1973: 59; Hill and Hawkes 1983: 179-182; Jackson 1983: 42-49; Morey and Metzger 1974: 34-37; Riviere 1969: 44; Saffirio and Scaglione 1982). A significant aspect of this work is its hit-or-miss character, often producing nothing or a great windfall. A single family is not a viable production unit (Chagnon 1977: 33; Flowers 1983: 365; Hames 1983: 401; Kaplan 1975: 38; Morey and Metzger 1974: 33-34; Siskind 1973a: 88; Yost and Kelly 1983: 214-215). In some areas, at least, fishing is more regularly productive than hunting (Beckerman 1980: 99; Jackson 1983: 39; Morey and Metzger 1974: 37-38). A consequence of this is the ubiquity in Amazonia of rules for sharing game and fish, often reinforced by supernatural sanctions (Chagnon 1977: 91; Clastres 1972: 168-170; Flowers 1983: 366-367; Hames 1983: 401; Harris 1984: 125; Henry 1964: 98; Hill and Hawkes 1983: 187; Jackson 1983: 47; Kaplan 1975: 38-41; Kaplan and Hill 1985: 233; Morey and Metzger 1974: 36; Murphy and Murphy 1974: 63-66; Shapiro 1972: 147-148; Siskind 1973a: 82-88; Wagley 1983: 66-67; Yost and Kelly 1983: 214-215). Hunting and meat are accorded high prestige, compared to vegetable foods (Clastres 1972: 153; Goldman 1963: 58; Jackson 1983: 47-48; Kaplan 1975: 38-39; Murphy and Murphy 1974: 62). Again, fishing is

sometimes of clearly lesser status (Morey and Metzger 1974: 38; Murphy and Murphy 1974: 64). Even if hunting and fishing is done alone, the necessary pooling of the product makes male work "social," in contrast to "domestic" female manioc production. This type of inequality has been cited as contributing to male dominance in many cultures (Friedl 1975: 22), and that observation is certainly consistent with the typical Amazonian pattern of a generalized sex antagonism and an ideology of male dominance (Bamberger 1974; Hugh-Jones 1978; Jackson 1975: 317-318).

Production, Conflict, and Residence

An ideology of male supremacy related to the division of productive labor may encourage development of a male-centered residence pattern, i.e. patrilocality. But there is no *direct* functional linkage of observed hunting and fishing organization to any particular type of residence. Women's work in childcare and food production does not foster cooperation at the village level, but we have seen that commercial production of manioc flour may favor female residential cores, i.e. matrilocality. It is quite possible that trade in farina existed between native groups before contact (see Milton 1984). Other types of production arrangements may also favor matrilocality.

Matrilocality and other social institutions strengthening cross-cutting ties may be fostered by ecological conditions which lead to an annual dispersal and subsequent reunification of a population, as Gross (1979: 334-335) suggests for Central Brazilian peoples. Production or trade activities that take men away from home for extended periods may encourage matrilocality as a way of ensuring order while men are gone (Kracke 1976: 296; and see Harris 1977: 61). Another factor is a pattern in which fathers-in-law exploit and control sons-in-law residing with them, either in permanent matrilocality or temporary uxorilocal bride-service. This is reported as an important social pattern in many areas of Amazonia (Arvelo-Jimenez 1971: 104; Harner 1973: 79-80; Hill and Moran 1983: 124-125; Kracke 1978: 37-40; Maybury-Lewis 1971: 384; 1974: 97-98; Metraux 1963a: 111-112; Morey and Metzger 1974: 50; Shapiro 1972: 94; Siskind 1973a: 77-81; Turner 1979: 159-160). However, the variability and complicated political and economic interactions involved in the father-in-law/son-in-law relationship make it difficult to generalize about circumstances giving rise to it, or about its independent causal significance.

There remains to be considered one other type of male work, although it cannot be called production. Warfare requires the coordinated cooperative effort of many men. As Chagnon (1977: 40) emphasizes, in an environment of potential war, the minimum size for a village is set by the manpower requirements of fighting. He puts that at about fifteen men: ten to raid, and five to remain on guard at home. Similar or higher numbers unquestionably apply in a great many native Amazonian so-

cieties.

Divale and Harris (1976: 526-527) make a general argument that collective male dominance in war-making is the basis of a widespread "male supremacist complex." Ideologies of male superiority are reflected, they assert, in the cross-cultural predominance in non-stratified societies of male-centered patterns, such as patrilocality (see also Friedl 1975: 59-60; Harris 1979a: 57-63). It seems very plausible that warfare would reinforce ideological tendencies inherent in the male role of hunter and that these two aspects of the organization of work together would create a strong superstructural bias in favor of patrilocality. But this would be a rather weak determinancy by itself. Both activities certainly can be organized on a matrilocal basis. The Mundurucu are the prime illustration of this possibility, although the contrasting principles of organization around males *and* females may explain their pronounced sexual polarization and collective opposition. Among the Mundurucu, "the battle of the sexes is not carried on by individual gladiators, as in our society, but by armies" (Murphy ad Murphy 1974: 110).

Patrilocality is also favored, and more decisively, by the structure of conflict. One reason that conflict favors patrilocality is that patrilocality is the simplest basis of male factional organization, requiring merely that sons remain in their fathers' homes. Otterbein (1985: xxii-xxiii) suggests that the patrilocal fraternal interest group is the primordial military organization. A second and probably more significant reason is that the nature of conflict in Amazonia often renders matrilocality unworkable. It will be shown elsewhere that the general areal pattern is that competition over scarce critical resources pits local people against each other. Competition and conflict between neighboring villages or bands, or even between households in a village, can make the cross-cutting ties of matrilocality untenable from both individual and societal perspectives. The breakdown of existing ties is an early phase in the process leading to war. It is precisely this potential for destruction of matrilocal households, according to Murphy, that forces the Mundurucu to so rigidly suppress internal conflict.

Production arrangements favoring matrilocality have already been described. Where production generates matrilocality, male conflict groups will be organized through personal networks and/or more complex structures built on top of female residential cores, such as men's houses or age grades. Ritter (in Ember, Ember, and Pasternak 1974: 72) finds that age grades are cross-culturally associated with the combination of frequent warfare and oscillating group composition, which fits the Central Brazilian pattern (see Maybury-Lewis 1974: 105-164; 1979b). When matrilocality is combined with local competition and fighting, special institutional arrangements may also be needed to cope with the inevitable complications of conflict. Again, the Central Brazilian peoples illustrate this, with their development of automatic rights of refuge granted to people fleeing conflict in home villages (Bamberger 1979; Maybury-Lewis 1974: 205-

206).

Matrilocality may be based upon circumstances of production, with the organization of conflict groups adjusted to it. With or without these considerations of production, matrilocality may also be favored by external warfare. As described earlier, matrilocal post marital residence establishes cross-cutting ties in probably the simplest and most fundamental way possible, and it breaks up or at least weakens fraternal interest groups that might increase internal divisiveness. However, we have seen that internal unity against a common enemy can be attained through other means. Matrilocality is more specifically determined if external war (in politically uncentralized societies) involves making long distance strikes, because of its advantages as a means of mobilizing larger parties of warriors for prolonged absences. Where a group's strategy in external war is primarily defensive, engaging in few or no long distance raids, realization of the matrilocal tendency may depend on other economic and historical conditions.

Two cases illustrate that situation. The Tapirape rarely if ever took the offensive in external war. Their matrilocal organization was consistent with the high labor requirements of their form of bitter manioc processing (they lacked the woven manioc press used by most Amazonian peoples) (Wagley 1983: 58-59, 250) and their origin on the Central Brazilian *cerrado*, the land of the matrilocal Gê and Bororo (Wagley 1983: 26, 93-94, 124). Upper Xingú peoples were usually on the defensive, but their unification against outside attackers was built on an intertribal culture, on top of patrilocally organized local groups above.

One interesting illustration of the relationships between production, conflict, and residence is presented by the Piaroa. Piaroa men hunt, but they also rely on fishing, which we have seen may be less conducive to male solidarity. The women are engaged in commercial farina production, but the severity of the dry season limits this to a couple of months per year (Kaplan 1975: 37-39). Production, then, generates only weak and contradictory tendencies regarding post-marital residence. There is no war among the Piaroa. They are one of the many Amazonian societies reported as entirely peaceful (Kaplan 1975: 20, 26). Obviously warfare is not a factor shaping residence. What is found in the absence of both causal factors? According to Kaplan (1975: 83, 120), the Piaroa lack *any* regular residence rule.

Fighting over Women

In the preceding section, I argued that conflict patterns interacting with basic circumstances of production shape post-marital residence. The next section provides further illustrations of that, and advances the argument that established residence patterns interacting with production and conflict feed back to shape another type of conflict: fighting over women.

It has long been recognized that abduction of adult women is a prominent feature of much Amazonian warfare (Oberg 1973: 191). But it is by no means a universal practice. There is much variation, and much of that variation seems attributable to the factors already under review here, post-marital residence and the organization of female labor. These affect the feasibility of adding an abducted woman to a household, as illustrated by a range of cases running from the Mundurucu to the Yanomamo.

The Mundurucu who spoke to Robert and Yolanda Murphy (personal communication) stated that women were never captured in their long distance raids around the turn of the century. That raiding was contemporary with their commercial production of farina. The two patterns together provided a strong basis for matrilocality and female autonomy. Even after warfare ended, a man's attempt to bring an outside woman into a household would be blocked by the resident females, who would descend on the new wife "like white cells on a virus" (Murphy and Murphy 1974: 146). The capture of women, however, is reported as a main goal in Mundurucu raiding in earlier years (Metraux 1963b: 386). A change had occurred. Details of this change are not available, but one scenario can be offered which is consistent with reported facts (Horton 1963: 272-273; Metraux 1963b: 387, 393; Murphy 1956; 1960: 30-47, 79-80), and the theoretical relationships argued here (cf. Ramos 1978: 687).

Around 1850, the Mundurucu of the Upper Tapajós River area had been working for years as mercenary raiders for the whites, and capturing women on these raids. They were patrilocal. They were able to muster large forces and carry out long distance attacks by virtue of a relatively developed system of political authority (see Horton 1963: 278). Over the next fifty years, a Western presence grew on the Upper Tapajós. Along with that came commercial production of farina, and an undermining of the authority of chiefs. The former change directly favored matrilocality; the latter did so indirectly because it eliminated the alternative basis of organizing large scale long distance war. By the turn of the century, the social organization described by Murphy had evolved, and the capturing of women in war had ended. This example calls attention to the importance of a historical perspective.

Returning to the ethnographic present, the Shavante are matrilocal, but their main crop is maize, not bitter manioc, and maize processing does not require the same female cooperation. Men can take plural wives, but these usually are sisters, and the established sibling relationships are carried over to the new household. Still, there are conflicts between factions over women, and obtaining women by force does occur, even if it is considered deviant (Maybury-Lewis 1974: 47, 76-77, 87-90, 179-180). Among other Central Brazilian peoples, the Apinayé did not capture women in war (Nimuendajú 1967: 120), but the Kayapó and Carajá did, at least from the Tapirape (Wagley 1983: 30). The Carajá, however, "did

not marry their female captives, but obliged them to become village prostitutes" (Metraux 1963b: 399). Along the Atlantic coast, the matrilocal Tupinamba captured some women in war, but these, like other captives, were kept for a time and then sacrificed (Metraux 1963a: 113).

The last two cases illustrate ways that even matrilocal groups can absorb a few female captives. A third way may be by taking new women into the households of political leaders and shamans, who are often polygynous and even patrilocal when no one else is (Arvelo-Jimenez 1971: 99-100; Holmberg 1969: 148; Jackson 1983: 193; Maybury-Lewis 1971: 384; Metraux 1963a: 112; Murphy 1960: 88). The social status of these men may translate into increased authority over the women of their households, perhaps through influence over a woman's kin.

The Guahibo are one case where political leaders and some other men are patrilocal despite a general matrilocal pattern. A main goal of Guahibo raiding was to capture women. Normatively, any man could take plural wives, but the anthropologists could learn of no actual case where a man brought an outside wife into a matrilocal household (Morey and Metzger 1974: 43, 76, 102).

Patrilocal peoples of the Upper Xingú and the Northwest Amazon represent another step along the continuum. Among the Trumai, bitter manioc was the principal crop, followed by maize. They also relied heavily on *piqui* fruit, the processing of which called for an annual burst of female labor. Women were regularly captured by outside raiders, and even though there was no open war among Upper Xingú groups themselves, conflict and even coerced ceding of women were common. Still, the status of women, their ability to assert themselves in their own interests, seems far above that reported for the Yanomamo (Murphy and Quain 1955: 13-14, 24, 30-31, 47-55, 94, 105; see also Basso 1973: 33-35).

The Cubeo relied on maize rather than manioc at the time of their active warfare, and the capture of women was a prominent goal in hostilities (Goldman 1963: 30, 162). Other Northwestern peoples had a war pattern, long suppressed, which is compared by Jackson to that of the Yanomamo. It is not clear if these peoples, like the Cubeo, had recently shifted from an older maize-based to their current bitter manioc-based economy. It is clear, however, that in recent years the production of farina for sale has become steadily more important. With that change, the fit of a new bride into a patrilocal household has become a delicate matter, taken into consideration in arranging marriages; disputes between men over women have become less frequent than before; and the status of women within the household and society has attained a level much higher than that found among the Yanomamo (Jackson 1983: 52, 62-63, 97, 117, 184-186, 192).

The Yanomamo stand at the opposite end of the spectrum from the Mundurucu. Besides being patrilocal (cf. Taylor and Ramos 1975), they are unusual within Amazonia for their reliance on plantains as a staple.

Plantain cultivation and processing lack the cooperative character associated with bitter manioc. Women's work tends to be very individualistic. In polygynous unions, wives maintain separate hearths or even living areas. The status of women seems remarkably low, with men inflicting severe physical punishments for even trivial "offenses." So it is very possible for Yanomamo men to capture women and shift them around as pawns (Chagnon 1977: 35-36, 81-83; Shapiro 1972: 107-108; Smole 1976: 189; see also Biocca 1971). The Kaingáng, in flight from the Brazilian frontier, seem to be another case where women engage in little cooperative work, and where "theft" of women is a very prominent part of conflicts between men (Henry 1964: 15-16, 59-60, 160).

Having traversed a range of cases relating to the prominence of woman-capture in war, several general comments are in order. First, it is difficult to be precise about the relative significance of this practice because of a dearth of quantitative data on the subject. Probably the best data available pertains to the Yanomamo, but even there the picture is far from clear. Helen Valero (Biocca 1971: 31-43) tells of a rout in which almost all the women of a village were captured, "perhaps about fifty" (1971: 38). I found no other report of such large captures among the Yanomamo (or anywhere else in Amazonia), although taking five, six, or seven women at a time seems to occur with some regularity (Barker 1959: 153; Chagnon 1977: 41, 125). *Keeping* captive women is another matter, as they can flee or be retaken by their kinsmen. Chagnon (1977: 73) presents the following information: one unusually large and militarily powerful Yanomamo village has 38 men 35 years of age or younger. Data on older men is not given. They have 52 wives among them. Of these, 8 fall under the heading of wives by "alliance and/or abduction," although "most" of them are from abductions. More precise data of this sort would be helpful. We also do not know much about how captive women are distributed among men. Again, Chagnon (1972: 278; 1975: 105; 1977: 123) provides some of the best information available, but still not enough to give an adequate understanding of what occurs.

A second comment is that factors conducive to raiding for women are more complicated than just residence and female work patterns. As suggested above, men's organizations capable of maintaining "prostitutes," or political differentiation, can promote female capture. These suggest the importance of political organization as a crucial set of variables in war. Raiding for women may be encouraged by increasing importance of women's work for subsistence and trade, where that work does not entail self-directed cooperation among women. Patterns of conflict can also have significant ramifications. Shuara Jívaro men, for instance, compete over women among themselves, and a man might try to capture a woman on a long distance raid. But he would usually lose the woman to another warrior seeking to obtain a precious trophy head (Harner 1973: 80, 96, 107, 186). So the pattern of their war actually discourages the abduction of females. On the other hand, warfare and accompanying social patterns

may generate feedback aggravating conflict over women. Raiding for women itself may further lower female status in society, thus making it even easier to bully women and so reinforcing the raiding. The use of sex as a reward for warriors would doubly reinforce this (Divale and Harris 1976: 526; and see Chagnon 1972: 274). Patrilocality generated by local conflict makes polygyny more feasible, and this can increase competition among men. Polygyny has been used as a diagnostic of fraternal interest groups (Otterbein and Otterbein 1965). Patrilocality may also be a crucial intervening variable between warfare and female infanticide (Hawkes 1981: 81-83), which can further heighten competition over women. Finally, Siskind (1973b) has argued, as will I elsewhere, that intensity of conflict over women in some circumstances is directly linked to increasing competition for critical resources.

A third comment is that the goal of woman capture is usually insufficient to initiate hostilities. The pointed difficulties and risks involved in capturing and holding women, and the more general problems of the war that an abduction might provoke, outweigh the diffuse, long-term, and somewhat uncertain benefits of adding a new woman to a household. All those cost factors are reduced or eliminated if hostilities already exist. This fits the Yanomamo case, where generally "the desire to abduct women does not lead to the initiation of hostilities between groups that have had no history of mutual raiding in the past ... Once raiding has begun between two villages, however, the raiders all hope to acquire women..." (Chagnon 1977: 123). The capture of women is a structurally determined variable which can shape and reinforce war patterns, but it is usually not a primary cause of war.

There is at least one alternative hypothesis regarding the prominence of woman capture in Amazonian warfare. Chagnon applies a sociobiological perspective to explain competition and conflict over women as a consequence of men trying to maximize their reproductive success. His hypothesis is stated most forcefully in a comparison of Amazonia and New Guinea (see also Chagnon 1979: 400-401; 1981: 507):

Where it is relatively easy for males to assemble the material wherewithal required [to rear their offspring to adulthood], we would predict that males would attempt to have polygynous households and that competition for mates rather than competition for resources would be significant. On the other hand, where resources are relatively scarce and/or costly, energetically, to assemble, polygynous households are less likely to occur at high frequencies, for the requirements of paternal investment in that situation entail greater costs to males, and this sets limitations on their reproductive success. The contrast between Highland New Guinea and Amazonas should be obvious in this regard, especially the relationship between population densities and resources on the one hand and what the individuals seem to be fighting over on the other (Chagnon 1980: 123).

The proposition that resource scarcity and polygyny are inversely related in Highland New Guinea cannot be considered here. Within Amazonia, however, we have already seen several cases where polygyny and conflict over women are much less prominent than among the Yanomamo. To support his hypothesis, Chagnon would have to show that these others experience some resource scarcity which is not found among the Yanomamo. I doubt that this can be done. A more compelling reason to question the hypothesis, however, is Chagnon's own description of villages at the "center" and "periphery" of Yanomamo territory. The "center" is more densely inhabited and characterized by much more intensive warfare (Chagnon 1967: 113-114). The areas also differ in the degree of conflict over women.

The attitudes about extra-marital sexual liaisons differ in both areas. At the center, trysts inevitably lead to fighting and often to killing and village fissioning. At the periphery, the affairs are tolerated if not institutionalized. A corollary of this is the surprisingly high incidence of polyandry in some villages at the periphery, all of which may be summarized by concluding that there is a more equitable distribution of the sexual services of women at the periphery and, therefore, a great reduction in one of the major causes of Yanomamo disputes (Chagnon 1973: 135).

The combination of lower population density in a similar environment, negligible competition over women, and less war seems incompatible with Chagnon's hypothesis. It fits quite well, however, with the view that competition over women is, or can be, a secondary reinforcer of conflicts engendered by resource scarcity.

Finally, one cross-cultural study raises a question about the argument I have advanced. Ayres (1974) finds that "bride-theft" has a very strong negative association with matrilocality, but asserts that "raiding for wives ... occurs with equal frequency among matrilocal and patrilocal societies" (1974: 249). Unfortunately, Ayres does not present the data on the latter point. That, along with questions regarding coding and sample size (in cases of raiding for wives), prevents further consideration here.

Conclusions

The relationship between post-marital residence and conflict patterns suggested by Murphy is supported by cases throughout Amazonia, with several clarifications and modifications. Understanding the relationship, however, requires attention also to the organization of work and production. Patrilocality and fraternal interest groups are favored by an ideology of male superiority based on the social character of men's work in production and war, and by the dynamics of competition and conflict over resources. Matrilocality is favored by cooperative female production effort, by a subsistence pattern involving seasonal dispersal and regrouping, and by parents' interests in adding sons-in-law to their households.

These production considerations can lead to matrilocality even in situations of local conflict over resources, which combination produces institutional and behavioral complications. Matrilocality is also favored by longer distance war, especially offensive warfare. The strongest determination of either residence pattern is when the implications of production and conflict coincide.

In regard to the causal relationship between local conflict and fraternal interest groups -- production factors aside -- the situation in Amazonia seems to be that local competition and conflict leads to fraternal interest groups. Then, if the competition is critical and other factors not discussed here are right, those groups go to war. The presence of fraternal interest groups alone does not lead to war, although it does make it easier for wars to begin. A conflict of interest which might be resolved peaceably in a matriloal situation may lead to war in a patriloal situation. In this sense, fraternal interest groups can be said to be a cause of war. The varying significance of fighting over women shows another way in which structurally determined factors can have a major impact on the process of war, even in cases near a minimum level of cultural evolutionary elaboration.

The effective availability of critical resources and the actual production processes by which resources are transformed into products for human use are parts of the material base or etic infrastructure of a society. Though not the focus of this chapter, I believe that these conditions interacting with demographic factors set the basic parameters for war and peace. Within these parameters, however, structural arrangements affect the incidence and practice of war. Infrastructural determination of war patterns always operates in the context of a given social structure, of an existing family and kin organization, political system, economy, etc. (see Harris 1979b: 51-56). Despite the problems of some functional analyses of war (Ferguson 1984: 28-36), the functional interdependence of social patterns is a fact. This fact applies to war as much as any social action. To make war, men must be mobilized, and this mobilization must be compatible with the existing arrangements for carrying out other vital functions. Again, I would place infrastructural factors as the primary shaper of these structural patterns, but the latter also have independent dynamics and consequences. Only a few key structural patterns have been investigated here, mainly those related to the fundamental organizing principle of gender. The division of the sexes has still other ramifications for war in Amazonia, via the medium of politics. Political patterns constitute another set of structural variables with crucial significance for warfare, which will be investigated in another work.

Materialists commonly stress that structural and even superstructural patterns have causal significance within the more general constraints established by material base or infrastructure. They less frequently investigate those secondary causal relationships. I can illustrate this by citing my own research on Northwest Coast warfare (Ferguson 1983; 1984b), in

which I do consider political patterns, but rule out consideration of kinship structures (although largely because of a lack of usable data). Since, in my view, a primary strength of a materialist approach is its amenability to theory *building*, to the incorporation of insights and findings of other researchers and perspectives into more general, complete, and consistent explanations (see Ferguson 1986; Price 1982), it is important to extend materialist analyses of warfare to include causal relationships above the infrastructure.

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