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## Marital Residence among Foragers

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In many species of mammals and birds, individuals leave their natal group or area upon maturity. Often, one sex remains (is philopatric) and the other disperses, and this is usually but not always attributed to inbreeding avoidance (Greenwood 1980, Moore and Ali 1984, Perrin and Mazalov 1999, Pusey and Packer 1987, Waser 1996). Sex-biased dispersal has important consequences in terms of male versus female kin-bonding or nepotism, the relative status of the sexes, mate acquisition, group defense, and many other aspects of social organization (Foley 1995, Ghiglieri 1987, Hawkes et al. 1998, Rodseth et al. 1991, Wrangham 1980). In most primates, as in most mammals, male dispersal is more common, but among our closest relatives, chimpanzees and bonobos, females usually disperse and males are philopatric (Foley 1995, Pusey and Packer 1987, Rodseth et al. 1991, Wrangham 1979). Postmarital residence in humans is often assumed to reflect philopatry. Where the couple resides with the husband's kin, for example, the situation is characterized as female dispersal and male philopatry. While this assumption is reasonable for most societies, in many hunting, gathering, and fishing societies (foragers) it is often difficult to define the natal group and area. Nonetheless, marital residence is a good indicator of potential nepotistic benefits. Because residence would have had profound consequences, it is important to consider what patterns might have existed at various stages in human evolution. To reconstruct the past, it makes sense to begin with a cross-cultural view of ethnographically described foragers.

Anthropologists have long debated which marital residence pattern is most prevalent among foragers. Many have argued that foragers are predominantly virilocal,

that is, that married couples live in the same camp as the husband's parents (Ember 1975, Foley 1995, Radcliffe-Brown 1930, Rodseth et al. 1991, Service 1967). Service argued that hunter-gatherers are mostly virilocal because males prevail in their desire to live with their kin, hunting being an important cooperative enterprise and one that is best performed by males who have grown up together (Service 1967). Others replace "hunting" with "raiding and warfare" or "defense of resources" or "defense of females" and come to similar conclusions (Ember and Ember 1971, Foley 1995, Ghiglieri 1987, Wrangham and Peterson 1996).

Others have argued that foragers tend to have a more flexible, ambilocal or bilocal pattern, with couples choosing to reside near the kin of the husband or the wife (Eggan 1968, Lee 1979, Murdock 1949, van den Berghe 1979). Murdock (1949:204), for example, argued that "adoption of a migratory life in unstable bands seems particularly conducive to this rule of residence; a family may pitch its tent or erect its hut near the father's relatives at one campsite and near the mother's at the next, or if they belong to different bands it may reside with either or shift from one to the other." Few have argued that foragers are primarily uxorilocal, that is, live with the wife's parents; rather, the debate has been whether foragers are mostly virilocal or mostly bilocal.

There have been several previous analyses of forager marital residence (Ember 1975, 1978; Kelly 1995; van den Berghe 1979), with Ember's being the most frequently cited. To characterize the dominant view of forager residence as virilocal, I quote Rodseth et al., who summarize Ember's analysis as follows: "Almost two-thirds of the societies in the hunter-gatherer sample appear to localize men, while less than a fifth localize women, suggesting that hunter-gatherer residence patterns are not substantially different from those of human societies in general" (Rodseth et al. 1991:230).

Ember used the *Ethnographic Atlas* and did not consider change in residence throughout the life of a marriage. Taking account of residence in the early as well as the later years of marriage is important for several reasons: (a) if they are different, residence is actually bilocal or multilocal;<sup>1</sup> (b) if the early pattern persists more than half the lifetime of a marriage, it is more important than residence in later years; (c) if divorce and remarriage occur, a second or third marriage technically returns a person (a man, anyway) to the early years of a marriage; and (d) because husbands tend to be older than their wives, there is a greater chance that their parents

1. "Multilocal" is a term used to indicate nonunilocal residence (Ember and Ember 1972). Among small-scale societies, couples usually live near some kin, but which kin varies. Ember and Ember exclude neolocal and duolocal residence and count only societies with an optional pattern or dominant pattern with a frequent alternative. I use a different definition because I want to distinguish virilocal and uxorilocal from everything else and assess flexibility in residence. I assume that couples in societies with neolocal residence live near more distant kin than parents and choose where to live opportunistically, as is the case with duolocal residence as well.

will be dead, especially as the marriage continues. This last point means that even if virilocal residence is said to be the rule, in practice we may find it less common than expected simply because of demographics. My goal here is to improve on previous analyses by considering additional variables from the less biased Standard Cross-Cultural Sample. The results of my analysis refute the dominant view of forager residence as virilocal.

#### MATERIALS AND METHODS

To analyze residence patterns I used the World Cultures CD (2001), which contains all the variables coded in the *Ethnographic Atlas* (EA), and the Standard Cross-Cultural Sample (SCCS). The EA includes information culled from the ethnographies of 1,267 societies, but only a few variables have been coded, and there is no attempt to control for sample bias. The SCCS, however, includes 186 societies with good ethnographic coverage that have been chosen to create an unbiased sample of the world's societies with respect to geographic region, language family, and cultural area, and many variables have been coded.

I defined "foragers" as those with < 10% direct dependence on agriculture, < 10% direct dependence on animal husbandry, trade accounting for less than 50% of the diet and less than any single source, and no horse-mounted hunters. All other societies were considered nonforagers. [The codes for all variables used are explained in the appendix in the electronic edition of the issue on the journal's web page.]

The SCCS has several marital residence variables. "Marital residence with kin: after first years" (v215) is the one most often cited,<sup>2</sup> but there is another on residence in the first years of marriage (v213). Two other variables on the World Cultures CD (v214 and v216) are the same as 213 and 215 respectively but recoded as "Transfer of residence at marriage: first years" and "after first years" by collapsing categories as follows: 1 = wife to husband's group; 2 = couple to either group or neolocal; 3 = husband to wife's group; 4 = no common residence;<sup>3</sup> 5 = for v214, same as v216.

I used the transfer variables as they are coded on the World Cultures CD because they are simpler, better get at the issue of which sex is localized with kin, and avoid

the problems of definitions that specify living with parents one or both of whom may be dead. For convenience, I call #1 "virilocal" and #3 "uxorilocal" (even though these terms normally refer specifically to living with parents while "patrilocal" refers to living with husband's father and "matrilocal" to living with wife's mother as in unilineal kin groups, which often do not exist among foragers).

To take account of residence in both early and later years for all the societies in the SCCS, I computed a new variable called "residence" to distinguish societies in which transfer in the first years (v214) and transfer in the later years (v216) were different or the same. The residence variable distinguishes societies that have a prevalent unilocal form (to wife's or to husband's group in both early and later years) from those with a prevalent multilocal form (to either group, to both groups, or to neither group), and it is coded as follows: 1 = virilocal, wife to husband's group early/late (v216 = 1, v214 = 5,1)(female dispersal); 2 = multilocal, ambi-/neolocal or first one and then the other ( $\neq 1,3$ )(bisexual dispersal); 3 = uxorilocal, husband to wife's group early/late (v216 = 3, v214 = 5,3)(male dispersal).

In some species of cercopithecine primates dispersal is extremely sex-biased, with none of the females emigrating, while in East African chimpanzees none of the males emigrate (Pusey and Packer 1987). If this sort of philopatry existed among human foragers, there would be no frequent alternative to the prevalent form of residence but only one sex dispersing. I therefore computed another variable by recoding *residence* as "strict residence" using the presence or absence of a frequent alternative form (v218). Strict virilocality, for example, occurs when residence is with husband's group in early and later years and there is no alternative form. Strict residence is coded as follows: 1 = virilocal, early/late, no alternative (*residence* = 1, v218 = 4,1)(only females disperse); 2 = multilocal ( $\neq 1,3$ )(both sexes disperse); 3 = uxorilocal, early/late, no alternative (*residence* = 3, v218 = 4,3)(only males disperse).

Nonparametric Mann-Whitney *U* tests were used for all comparisons between foragers and nonforagers. All correlations reported are Spearman ranked correlations.

#### RESULTS

There are 36 foraging societies in the SCCS by my criteria (table 1).<sup>4</sup> The results of statistical tests are reported in table 2. Residence among foragers is significantly dif-

2. Murdock's codes in the EA from which the SCCS residence variables are taken are as follows: A, avunculocal; B, ambilocal; C, optionally uxorilocal or avunculocal; D, optionally patrilocal (or virilocal) or avunculocal; M, matrilocal; N, neolocal; O, nonestablishment of a common household; P, patrilocal; U, uxorilocal; V, virilocal. This is all that Murdock says about how he coded residence. Lower-case letters following a capital indicate either culturally patterned alternatives to or numerically significant deviations from the prevailing profile. Lower-case letters preceding a capital indicate the existence of a different rule or profile for the first years of marriage (e.g., uP indicates initial uxorilocal residence followed by permanent patrilocal residence).

3. No common residence is reported for only four societies, only one in later years, and none among foragers and is therefore lumped with #2 in residence and strict residence.

4. North America is overrepresented among foragers (83% in the EA, 50% in the SCCS) because there were many foragers there when ethnographies were first written, while the Circum-Mediterranean region is completely absent because foragers had disappeared there before ethnographies were written. This regional skew cannot be corrected and might still be a problem using phylogenetic comparative methods.

TABLE 1  
Foragers in the Standard Cross-Cultural Sample

SCCS No.	Name	Region <sup>a</sup> (v200)	ET	% Gathering (v205)	% Hunting (v204)	% Fishing (v203)	% Male Contribution (100%-v885)	Descent <sup>b</sup> (v70)	Marriage <sup>c</sup> Model/Alternate (v208/9)	Transfer: After First Years (v216)	Transfer: First Years (v214)	Transfer: Alternate Form (v218)	Residence	Strict Residence
2	Kung*	A	16.7	80	20	0	40	B	BS	Ambi/Neo-	Wife's	Same	Multilocal	Multilocal
9	Hadza*	A	20.9	60	40	0	40	B	BP	Ambi/Neo-	Same	Same	Multilocal	Multilocal
13	Mbuti*	A	19.5	30	70	0	52	B	FKE/BP	Husband's	Same	Wife's	Virilocal	Multilocal
77	Semang*	EE	17.1	40	30	30	80	B	A	Husband's	Wife's	Same	Multilocal	Multilocal
79	Andaman*	EE	23.6	40	20	40	50	B	A	Ambi/Neo-	Same	Same	Multilocal	Multilocal
80	Vedda*	EE	22.7	40	30	30	80	M	TBP	Wife's	Same	Ambi-Neo-	Uxorilocal	Multilocal
86	Badjau*	IP	25.1	00	0	80	65	B	BP	Ambi/Neo-	Same	Same	Multilocal	Multilocal
90	Tiwi*	IP	22.7	50	30	20	40	D	BP/BS	Husband's	Same	Wife's	Virilocal	Multilocal
91	Aranda*	IP	16.0	60	40	0	40	D	Dowry	Husband's	Same	Same	Virilocal	Virilocal
118	Ainu	EE	12.3	20	30	40	52	D	A	Husband's	Same	Wife's	Virilocal	Multilocal
119	Gilyak	EE	10.8	20	30	50	80	P	BP	Husband's	Same	Same	Virilocal	Virilocal
120	Yukaghir	EE	9.6	10	50	40	100	B	BS/FKE	Wife's	Wife's	Husband's	Multilocal	Multilocal
122	Ingalik	NA	10.4	10	40	50	77	B	A	Wife's	Same	Husband's	Uxorilocal	Multilocal
123	Aleut	NA	10.4	10	30	60	90	P	BS	Husband's	Wife's	Same	Multilocal	Multilocal
124	C. Eskimo	NA	8.8	00	40	60	85	B	BS	Ambi/Neo-	Same	Husband's	Multilocal	Multilocal
125	Montagnais	NA	11.8	20	60	20	70	B	BS	Husband's	Same	Same	Virilocal	Virilocal
126	Micmac	NA	12.5	10	50	40	92	B	BS	Husband's	Wife's	Same	Multilocal	Multilocal
127	Saulteaux	NA	11.4	20	40	40	70	P	A	Husband's	Same	Wife's	Virilocal	Multilocal
128	Slave	NA	10.7	10	50	40	80	B	BS	Husband's	Wife's	Wife's	Multilocal	Multilocal
129	Kaska	NA	10.7	10	40	50	65	M	BS	Wife's	Same	Same	Uxorilocal	Uxorilocal
130	Eyak	NA	10.9	20	30	50	80	M	BS	Husband's	Wife's	Same	Multilocal	Multilocal
131	Haida	NA	11.3	20	20	60	80	M	BS	Husband's	Wife's	Same	Multilocal	Multilocal
132	Bellacoola	NA	11.8	20	20	60	80	A	GE	Husband's	Same	Wife's	Virilocal	Multilocal
133	Twana*	NA	13.0	10	30	60	75	B	GE/BP	Husband's	Same	Same	Virilocal	Virilocal
134	Yurok	NA	12.9	40	10	50	57	B	BP	Husband's	Same	Wife's	Virilocal	Multilocal
135	Pomo*	NA	14.2	40	30	30	62	B	A	Ambi/Neo-	Same	Same	Multilocal	Multilocal
136	Yokuts*	NA	14.9	50	20	30	79	P	A	Husband's	Wife's	Same	Multilocal	Multilocal
137	Paiute	NA	12.7	50	30	20	50	B	A	Wife's	Wife's	Husband's	Multilocal	Multilocal
138	Klamath	NA	11.6	30	20	50	57	B	GE/BP	Husband's	Same	Wife's	Virilocal	Multilocal
139	Kutenai	NA	12.3	30	30	40	70	B	A	Husband's	Wife's	Wife's	Multilocal	Multilocal
162	Warrau*	SA	14.8	40	30	20	72	B	BS	Wife's	Same	Same	Uxorilocal	Uxorilocal
173	Siriono*	SA	19.3	30	50	10	80	B	A	Wife's	Same	Same	Uxorilocal	Uxorilocal
178	Botocudo*	SA	18.0	50	40	10	50	B	A	-	-	-	-	-
179	Shavante*	SA	21.3	40	30	10	62	P	BS	Wife's	Same	Same	Uxorilocal	Uxorilocal
180	Aweikoma*	SA	14.4	40	60	0	70	B	A	Ambi/Neo-	Same	Same	Multilocal	Multilocal
186	Yahgan	SA	9.5	10	20	70	55	B	BS/TBP	Husband's	Same	Same	Virilocal	Virilocal

<sup>a</sup>A, Africa; EE, East Eurasia; IP, Insular Pacific; NA, North America; SA, South America.

<sup>b</sup>B, bilateral; M, matrilineal; P, patrilineal; D, double; A, ambilineal.

<sup>c</sup>BS, bride service; BP, bride price; FKE, female kin exchange; A, absence of consideration; GE, gift exchange; TBP, token bride price; D, dowry.

\*Warm-climate sample,  $n = 16$  since Botocudo residence data are missing.

ferent from residence among nonforagers.<sup>5</sup> Compared with nonforagers, foragers are significantly less virilocal ( $U = 1,950, p = .006, n = 185$ ) and more multilocal ( $U = 2,165, p = .039, n = 185$ ) (fig. 1). This is mainly because early residence among foragers is significantly biased toward uxori-locality ( $U = 2,085, p = .019, n = 185$ ) and less toward virilocality ( $U = 1,932, p = .005, n = 185$ ) (fig. 2). One reason for this is bride service (in which a man provides food to his wife's family and therefore usually resides with them), which is more common among foragers (36%) than among nonforagers (7%) ( $U = 1,923, p < .0005, n = 186$ ). Bride price is more common among nonforagers (44%) than among foragers (14%) ( $U = 1,887, p = .001, n = 186$ ), since wealth can be used to purchase wives. Table 2 shows that strict residence is also significantly less virilocal among foragers than among nonforagers ( $U = 2,055, p = .013, n = 185$ ) and that a higher percentage (74%) of foragers is multilocal ( $U = 2,127.5, p = .041, n = 185$ ).

Many of the foraging societies in this sample are arctic

5. Even using the EA and the variable Ember (1978) used (v11, v215 in the SCCS but the transfer version coded virilocal or not), foragers are less virilocal than nonforagers ( $U = 105,514, p = .001, n = 1,267$ ).

and subarctic foragers. If we are interested in residence patterns prior to the fairly recent occupation of such cold climates, we need a sample of foragers in warmer climates. Effective temperature is a variable that reflects the intensity and distribution of solar radiation, calculated from the mean temperature of the warmest and coldest months. If we limit the sample to societies for which effective temperature is  $\geq 13^\circ\text{C}$  (noted by \* in table 1), about the latitude of the U.S.-Canada border, we get a sample that is not only more relevant for earlier times, prior to the appearance of agriculture, but also geographically balanced. This warm-climate sample has 19% of the societies in each region (Africa, East Eurasia, Insular Pacific, North America) except South America, with 25%. It displays no bias toward virilocal residence at all, with multilocality being dominant (table 2, fig. 3). With strict residence, there is an even greater dominance of multilocality (69%) and a slight bias toward uxori-locality (18.8%) over virilocality (12.5%) (fig. 4).

Foragers also differ from nonforagers in reckoning kinship. A higher percentage of foraging societies (64%) than of nonforaging societies (31%) trace their kin through both mother and father (bilateral descent) ( $U = 1,803, p < .0005, n = 186$ ). Nonforagers are more patrilineal (47%)

than foragers (14%) ( $U = 1,815, p < .0005, n = 186$ ). Across all societies, patrilineal societies are more likely to have virilocal residence ( $U = 2,693, p < .0005, n = 185$ ). Thus, descent and residence appear to influence each other, as we would expect, since kin ties are going to be stronger when people live together. The much more frequent nonunilineal descent (bilateral, double, ambilineal) of foragers (75%) suggests that they are interacting bilaterally even when residence is unilocal.

Foragers are less virilocal and more multilocal than nonforagers because of the distribution of the foods they acquire and the way they go about acquiring them. Even among many of the societies classified here as nonforagers there is some degree of gathering, hunting, and fishing, and this helps illuminate their effects. Across all societies, the greater the dependence on gathering, hunting, and fishing, the less likely that residence is virilocal. Hunting has the strongest effect and, contrary to the argument of Service (1967), results in less, not more, virilocality ( $r_s = -.220, p = .003, n = 185$ ).

Hunting is also correlated with bilateral descent and less sedentism, probably because mobile resources such as game require large home ranges. This illustrates how other factors that explain residence flow from the food quest. For example, foragers are less sedentary than nonforagers ( $U = 826, p < .0005, n = 186$ ). Most foragers in the SCCS sample are coded as nomadic or seminomadic (72% and 88% in the warm-climate sample) while only 15% of nonforagers (mostly pastoralists and some horticulturalists) are so coded. Across all societies, those that are more sedentary are more likely to have virilocal residence ( $r_s = .249, p = .001, n = 185$ ) and less likely to have multilocal residence. Across all societies, greater dependence on hunting and gathering (but not fishing) is associated with less sedentism. Foragers that are more sedentary are more likely to have unilineal descent ( $r_s = .331, p = .049, n = 36$ ), live at higher latitudes ( $r_s = .461, p = .005, n = 36$ ), and do more fishing ( $r_s = .453, p = .006, n = 36$ ). Hunting and gathering (but not fishing)

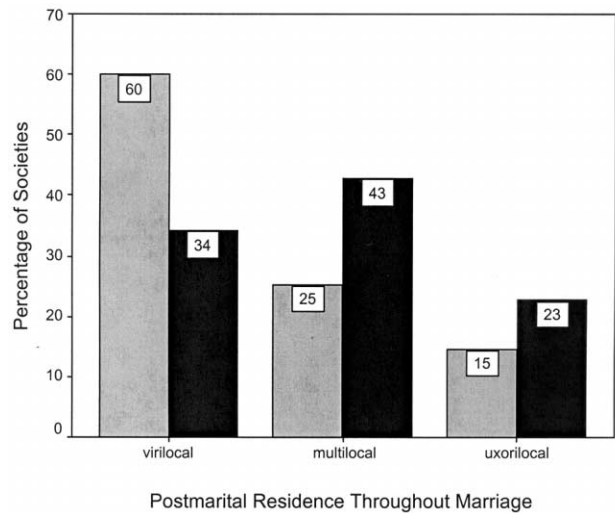


FIG. 1. Percentage of nonforagers (gray bars) and foragers (black bars) by residence, based on early and later years of marriage ( $n = 185$ ).

favor greater mobility, which is associated with flexible residence and bilateral descent.

Because of the constraints of foraging, a third reason foragers are less virilocal and more multilocal than nonforagers is their significantly smaller local groups (median population < 50), which require that people find mates outside their camp. Among nonforagers, many societies can afford to be unilocal and marry within their own local group, since sex-ratio variation and perhaps inbreeding are less of a problem in larger groups (Ember and Ember 1972). Across all societies, there is a higher percentage of endogamous marriage where strict residence is unilocal ( $r_s = .153, p = .039, n = 185$ ) and where local groups are larger ( $r_s = .206, p = .012, n =$

TABLE 2  
Marital Residence Patterns (Percentage) of Nonforagers, Foragers, and Warm-Climate Foragers

Sample and Category	Early Transfer	Late Transfer	Residence	Strict Residence
Nonforagers ( $n = 150$ )				
Virilocal	60.7**	70.7	60**	30.7*
Multilocal	11.3	14.7	25.3*	60.7*
Uxoriocal	28*	14.7	14.7	8.7
Foragers ( $n = 35$ )				
Virilocal	34.3**	57.1	34.3**	14.3
Multilocal	17.1	20	42.9*	74.3*
Uxoriocal	48.6*	22.9	22.9	11.4
Warm-climate foragers ( $n = 6$ )				
Virilocal	25	37.5	25	12.5
Multilocal	31.3	37.5	50	68.8
Uxoriocal	43.8	25	25	18.8

NOTE: Botocudo residence data are missing.

\* $p < .05$ .

\*\* $p < .01$ .

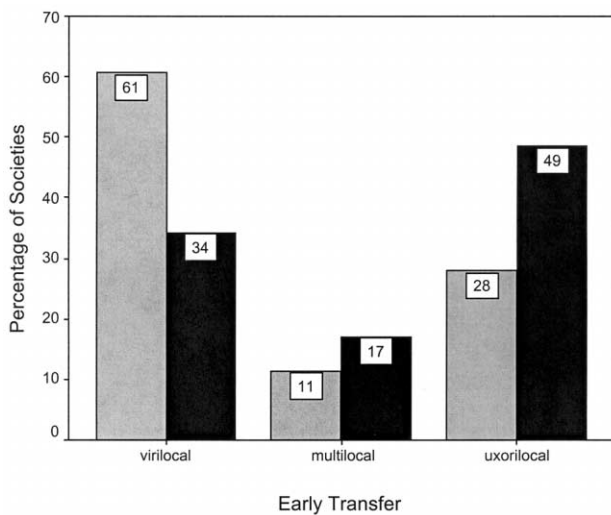


FIG. 2. Percentage of nonforagers (gray bars) and foragers (black bars) by transfer of residence during the first years of marriage ( $n = 185$ ).

148). Foragers live in such small groups that they need to find mates outside their local group even when unilocal. Even though some foragers accomplish this through large seasonal aggregations, multilocal residence may often be favored because those willing and able to reside in either their own or their spouse's camp maximize their marital options.

Another reason that foragers are less virilocal than nonforagers is that, owing to the constraints of foraging, they have little wealth. For example, foragers are significantly more likely to have no inheritance of land (72.2%; warm-climate foragers 88.2%) than nonforagers (22%) ( $U = 826.5$ ,  $p < .0005$ ,  $n = 157$ ). They are also more likely to have no inheritance of movable property ( $U = 1,346$ ,  $p = .002$ ,  $n = 152$ ). With agriculture and sedentism, land can be guarded and resources stored. When resources can be controlled, it pays males more than females to accumulate large amounts of them, since they can convert them into much greater reproductive success (for example, bride price to acquire many wives). Parents will gain more by passing resources to sons than to daughters, and this will favor virilocality and patrilineal descent (Clutton-Brock, Albon, and Guinness 1981, Hartung 1982, Trivers and Willard 1973, Willson and Pianka 1963). Across all societies, for example, there is a correlation between virilocal residence and patrilineal inheritance of land ( $r_s = .389$ ,  $p < .0005$ ,  $n = 154$ ) and movable property ( $r_s = .340$ ,  $p < .0005$ ,  $n = 152$ ). With little wealth, foragers do not gain as much from male-biased inheritance and thus have less reason to reside virilocally.

Yet another reason that foragers are less virilocal than nonforagers is that they have a lower frequency of warfare, probably because they have less stored wealth and less defensible home ranges. Warfare could favor virilocal

residence, since related males should be better able to defend the group (Ember and Ember 1971, Rodseth et al. 1991). There are two kinds of warfare in the SCCS, warfare between local groups in one ethnic community and warfare between different ethnic communities. What is true across all societies is also true across foragers; internal warfare is correlated with virilocal residence ( $r_s = .421$ ,  $p = .020$ ,  $n = 30$ ) but external warfare is not ( $r_s = -.004$ ,  $p = .983$ ,  $n = 31$ ). Internal warfare is rare among foragers (median = 1: absent or rare), and both types of warfare are significantly less frequent among foragers than among nonforagers. Since most foragers have peaceful interactions with other camps within their ethnic group, there is less need for defense and virilocality is less common than it is among nonforagers. With the advent of agriculture and the increasing importance of property, warfare probably contributed to the increase in virilocality.

Some have suggested that virilocality might be favored where men contribute more to subsistence and uxoriocality where women contribute more (Linton 1936, Murdock 1949, Service 1967). Across all societies, there is no correlation between male contribution to subsistence and residence (but see Korotayev 2001). Among foragers there is an almost significant relationship, though it is opposite of the one predicted. Males contribute less where residence is virilocal and more where it is uxoriocal. This may be due to the interaction between residence and polygyny, especially sororal polygyny, since the proportion of polygynous men is greater where women contribute more to subsistence (Marlowe 2003).

## DISCUSSION

Contrary to the conclusion of Rodseth et al. (1991) that "hunter-gatherer residence patterns are not substantially

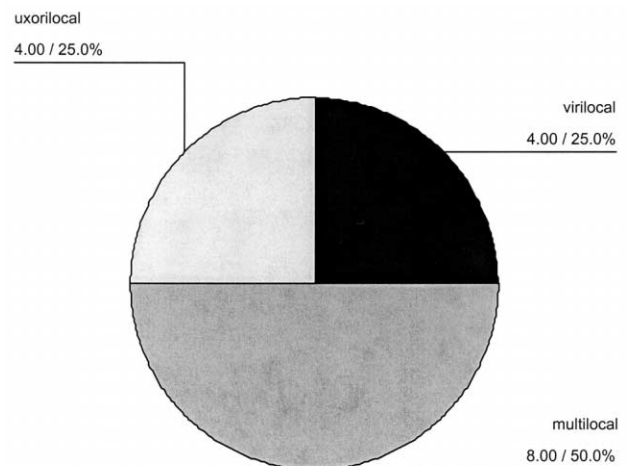


FIG. 3. Residence among warm-climate foragers ( $n = 16$ ), showing number and percentage of societies in each category.

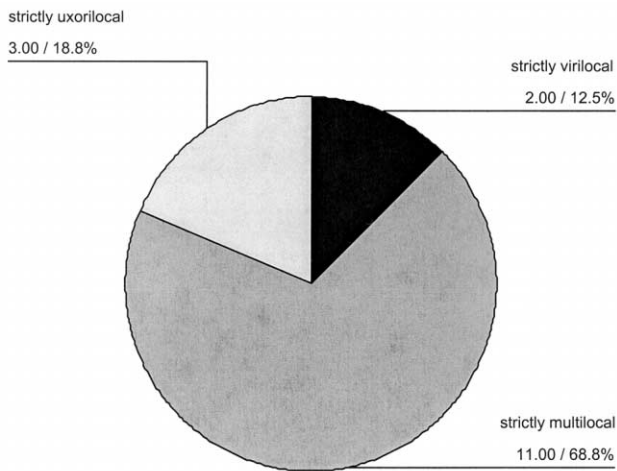


FIG. 4. *Strict residence among warm-climate foragers (n = 16), showing number and percentage of societies in each category.*

different from those of human societies in general," there is a significant difference between them. Many foragers also have a frequent alternative to the prevalent mode of residence, which means that they have greater residential flexibility than nonforagers. Among the Hadza, with whom I work, couples live with the wife's parents, the husband's parents, parents of both at the same time, or no parents but more distant kin such as aunts or siblings. Sometimes they are in small camps with no kin. The only appropriate term for this is multilocal. A similar pattern is reported for many other foragers (Kelly 1995).

Because of the fluidity of forager residence, it is easiest to describe residence with respect to which spouse's parents (or other close kin) live in the same camp, but what often happens is that elderly people decide which of their children they should go to live with rather than the other way around (as, for example, among the Hadza and the Ju/'hoansi [Irv DeVore, personal communication]). The elderly parents may be indifferent as to whether they live in the same camp as their sons or daughters. If their choice depends on which grandchildren they want to help rather than which children can help them, we might expect them to prefer to live with daughters, since paternity uncertainty means that they can be more certain of their genetic relatedness to their grandchildren through their daughters than through their sons. Alternatively, if they live with their sons, they may be able to increase their sons' paternity confidence by monitoring their daughters-in-law.

Many societies classified as virilocal, such as many Australians, were in reality probably less so. Among several Australian societies there was a style of speaking, called "mother-in-law language," that a man was sup-

posed to adopt when around his mother-in-law.<sup>6</sup> If residence were strictly virilocal, there would be little opportunity for a man to be around his mother-in-law because he and his wife should be living with his kin, not his wife's kin. Citing Nicholas Peterson, Hiatt (1996: 152) says,

It was normal in many tribes for a man upon marrying to take up residence in the band of his wife's father. Given the contractual obligation of a son-in-law, it was obviously convenient to have him near at hand. At the same time, proximity increased the risk of sexual entanglement. . . . To put people's minds at rest, especially no doubt that of his wife's father, the son-in-law signaled day-in and day-out through his ritualized and overstated avoidance behaviour that there was no cause for worry: "I am here to give my mother-in-law gifts of meat, nothing else."

Because of the obligations men had to their in-laws, women as well as men maintained ties to their kin.

Virilocality may be overestimated even in the data presented here, since residence in later years is often a stated ideal rather than an observed frequency. Many Hadza I interviewed said that it was best to live with the wife's kin in the early years and with the husband's kin later on, but a synchronic census revealed that 68% of monogamously married women whose mothers were living resided in the same camp with them (Woodburn 1968). As was pointed out long ago in a debate on residence (Fischer 1958; Goodenough 1956, 1962), ethnographers in the past often attended more to stated rules than to the frequency of actual observed behavior. Many of the codes in the *EA* are derived from brief ethnographic descriptions based on interviews with one or a few informants (Alvarez 2004). For this reason, strict residence may be a more reliable measure of sex bias in dispersal than residence. After all, it is difficult to imagine how an ethnographer could err in describing a society as uxorilocal in early years and in later years and in having no frequent alternative form if in reality there were an overall bias toward virilocality. As table 2 shows, there is no sex bias in dispersal using strict residence.

Dispersal can be broken into social (from group) and locational (from area) (Isbell, Cheney, and Seyfarth 1990, Waser 1996), but even this distinction is inadequate to handle the complexities among many human foragers. Among the Hadza, for example, by the time a child is weaned he or she will have lived in several different camps in different areas with a wide range of people—some related through the mother, some through the father, and some not related at all. Parents, if they are alive and not divorced, may be the only ones who have remained throughout. How can we decide whether it is the wife or the husband who leaves the natal group or area upon marrying? Should "natal" refer to the first month of life, the first year, or the whole time prior to

6. Because a man was usually much older than his wife, his mother-in-law might be his age or younger.

marriage? With the emergence of agriculture, residence usually becomes less fluid and natal group and area less difficult to ascertain. Male philopatry tends to be favored among nonforagers because a sedentary existence promotes territorial defense and control of resources. Once wealth exists, male inheritance makes sense, and when land is inherited virilocal residence should become much more likely. Even though pastoralists are very nomadic, they can defend their resources (livestock) and therefore have good reason to be patrilineal and virilocal.

Explaining why foragers are less virilocal than nonforagers is easier than explaining why human foragers are more multilocal than most primates, including our closest relatives, chimpanzees and bonobos. The hominin diet is probably the key. Foragers, especially those who hunt and gather rather than fish, acquire foods that are spatially dispersed, such as tubers, honey, game, fruit, and berries. Foraging for these foods requires large day ranges. Depletion and seasonal fluctuation in foods require that camps move every so often, and therefore home ranges are much larger than those of our closest relatives. In short, the forager diet favors mobility. By maintaining kin ties traced bilaterally, individuals can increase their residential options. This allows them to move to available resources, but it also allows them to move away from someone they do not like or to move to a camp with potential mates. Bilateral descent facilitates multilocal residence. Without long-term pair bonds one could not know who one's father was and kinship could not be reckoned bilaterally. Therefore, diet alone may not be enough to explain multilocality, which may have evolved in conjunction with pair bonds and kin classification.

In conclusion, contrary to the orthodox view, most foragers are not virilocal. Women frequently live with their kin, especially in the early years of marriage. Murdock's bilocal view is supported by the cross-cultural data and for just the reasons he cited: small, mobile, flexible groups that maintain ties with kin of both husband and wife are well suited to foraging for dispersed and seasonal foods.

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## The Problem with Boys: Bridewealth Accumulation, Sibling Gender, and the Propensity to Participate in Cattle Raiding among the Kuria of Tanzania

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Although a fair amount has been written on the subject of African “crime” in general (e.g., Read 1964, Brillon 1985, Austen 1986, Cohen 1986, Crummey 1986) and East African livestock theft in particular (e.g., Fukui and Turton 1979, Anderson 1986, Hendrickson, Mearns, and Armon 1996), scant effort has been made to establish who, in a sociological sense, these “criminals” are (but see Moore 1975 and Heald 1986 for two noteworthy exceptions). This article endeavors to contribute to this effort using field data collected among the agro-pastoral Kuria of Tarime District in northern Tanzania.

Among the Kuria, whose population straddles the border between Tanzania and Kenya, many young men are actively engaged in an illicit livestock trade in which cattle stolen in Tanzania—mainly from other Kuria but also from neighboring peoples—are sold to buyers, mainly butchers, inside Tanzania or else run across the border for cash sale in Kenya. Kuria cattle raiding is by no means a new phenomenon, but it has undergone a profound transformation in the course of the past century—from its pre-colonial roles of demonstrating the mettle of new warriors and enlarging the community cattle herd to an illicit, of-

ten quite violent cash-market-oriented enterprise—in response to the pressures exerted by the colonial economy, capitalist penetration, and the policies of the postcolonial Tanzanian state (Fleisher 2000a, b).

Fleisher (1999) has already demonstrated that, among the Kuria, cattle theft is overwhelmingly the “occupation” of choice of those young Kuria men whom he has termed “sister-poor,” that is, those whose natal households lack a sufficient number of daughters to bring a large enough number of bridewealth cattle into the household to enable all of the sons of that household to acquire their first wives. Kuria bridewealth has historically been among the highest in East Africa, and it remains so to this day—notwithstanding the drastic decline, owing to cattle raiding and other factors, that the Kuria cattle herd has suffered in the course of the past 30 years. With income-generating opportunities in the area scarce, education levels low, and cattle the most prevalent highly valued commodity, a young Kuria man has scant, if any, alternatives to raiding for acquiring his bridewealth cattle if his family has an insufficient number of cattle at home.

In this report we draw on our analysis of data collected in a random survey of homesteads in Nyaheiya (not its real name), a Kuria village of the Nyamongo clan located in the Tarime District lowlands of northern Tanzania, about 90 kilometers from Tarime town, as a means of illuminating the characteristics of homesteads likely to include cattle raiders among their residents.

### THE ETHNOGRAPHIC SETTING

The field research on which this report is based was carried out in Nyaheiya over a 19-month period from August 1994 to March 1996. Although the village's proximity to the Mara River ensures it year-round water and plentiful, nutritious pastureland for its herd of about 5,800 cattle, agriculture is precarious there because of erratic rainfall patterns and recurrent drought. In the face of sporadically inadequate harvests, villagers are compelled to buy a substantial portion of their food from farmers in neighboring Serengeti District, relying on cattle raiding and on gold prospecting in the indigenous low-technology mining areas that pockmark the Nyamongo area to fulfill their cash needs.

Nyaheiya occupies an area of roughly 110 square kilometers and has an estimated population of 2,232 residing in 350 homesteads, each presided over by a male homestead head. A typical homestead consists of the male head, his wife or wives and all their unmarried children, and all their married sons, their wives, and their children. The widowed mother of the homestead head and sometimes other guests and relatives may also make their home there. Once a son of the homestead head has had his eldest child—of whichever sex—circumcised, this son, his wife or wives, and their children typically move out of the homestead to establish a new homestead of their own.

A homestead is, in turn, made up of one or more mother-centered households, each consisting of a wife