The Matrilocal Tribe
An Organization of Demic Expansion

Doug Jones

Abstract This article integrates (1) research in the historical dynamics of state societies relating group solidarity and group expansion to cultural frontiers, (2) comparative research in anthropology relating matrilocality to a particular variety of internal politics and a particular form of warfare, and (3) interdisciplinary reconstructions of large-scale “demic expansions” and associated kinship systems in prehistory. The argument is that “metaethnic frontiers,” where very different cultures clash, are centers for the formation of larger, more enduring, and more militarily effective groups. In small-scale non-state societies, the major path toward the formation of such groups is the establishment of cross-cutting ties among men. This often involves the adoption of matrilocal norms. The current distribution of matrilocality and matrilineality around the world may be partly a residue of major demic expansions in prehistory involving matrilocal tribes. This hypothesis is evaluated with a range of evidence, including information regarding the spread of two language families, Bantu and Austronesian.

Keywords Demic expansion · Frontier · Kinship · Matricentric · Matrilineality · Matrilocality · Warfare

The title of this article plays off an earlier title, “The segmentary lineage: An organization of predatory expansion” (Sahlins 1961). Sahlins’s article was concerned with the expansive potential of a society organized around nested patrilineages, in which fighting between lower-level segments alternates with coordinated military action on a large scale against outsiders. Sahlins reviewed evidence from two societies, the Nuer of southern Sudan and the Tiv of northern Nigeria, arguing that segmentary lineages played a central role in the large-scale expansions that both went through before the twentieth century.
This article, however, considers the hypothesis that a different mode of expansion, involving matrilocal and matrilineal societies, has been important in tribal societies over large areas of the world and helps to account for distribution of matrilineality and related institutions in the ethnographic present.

The argument is laid out in several stages. First, I review several competing hypotheses, relating matrilineality to subsistence regimes and/or strategies of kin investment. The evidence here comes largely from cross-cultural studies. I conclude that these leave an important part of the variation unexplained. Next, I lay out an alternative historical-political explanation. Briefly, matrilocal residence is one instance of a more general phenomenon in which conflict—especially warfare—along cultural frontiers leads to increased solidarity within societies. In tribal societies facing external challenges, increasing social scale and group solidarity are attained by cultivating cross-cutting ties, which may involve a shift to matrilocal residence. This results eventually in a further shift to matrilineality. The evidence regarding matrilocality and cross-cutting ties comes from a classic case study, the Mundurucú Indians of Brazil, and from a range of cross-cultural studies of kinship, politics, and warfare. Finally, I consider some large-scale geographic patterns in the distribution of matrilocality and matrilineality associated with the Bantu and Austronesian language families. At a minimum, both expansions seem to have passed through matricentric phases which contributed to the spread of matrilocality and matrilineality over large areas. More tentatively, matrilocality and matrilineality may be not just a concomitant of, but a cultural adaptation to, life along a cultural frontier. The evidence here comes from reconstructions of demic expansions based on archaeology, historical linguistics, ethnohistory, and cultural phylogenies.

This article is a work of review and synthesis, integrating a number of lines of theory and evidence that have developed mostly independently of one another. The conclusions are preliminary. In the last section, I consider what further evidence might be needed to test and refine the theory proposed here and then step back to compare the postulated expansion of matrilocal tribes with the predatory expansion of segmentary patrilineages described by Sahlins (1961).1

The Matricentric Puzzle

The discovery that some tribal societies are matrilocal and/or matrilineal, and often reflect this organization in their kin terminologies, helped to inaugurate the study of kinship in anthropology more than a century ago. It raised the still-unresolved question of why some societies and not others are matricentric. The brief review in this section of economic and sociobiological factors in matricentricity is a prelude to the political-historical hypothesis set forth in the remainder of this paper. (For a more thorough treatment, see Mattison 2011; Shenk and Mattison 2011.)

1 A note on terminology: I am concerned here with a cluster of institutions: matrilineal descent groups (groups based on descent through the female line), matrilocal residence (a man moves from his natal household to reside with his wife and her kin), and avunculocal residence (a man and his wife reside with his mother’s brother). Here I define a “matricentric” society as a matrilineal, matrilocal, or avunculocal society (Burton et al. 1996) and subsume “uxorilocality” under “matrilocality” and “virilocality” under “patrilocality.”
Economy and Matricentricity  

Some modes of subsistence virtually preclude matricentric social organization. Matrilocality and matrilineality are rare in societies heavily dependent on plow agriculture or pastoralism (Brown 1970). Matricentricity is most common among horticulturalists not heavily dependent on livestock. Aberle (1961) found matrilineality among 8% (19 of 242) of pastoralists and agropastoralists and 30% (47 of 188) of horticulturalists. The relationship seems to be causal: in Africa, the adoption of pastoralism in a matrilineal society is usually followed within 500 years by a shift to patrilineality (Holden and Mace 2003, 2005).

Previously, such associations led many authors to propose that women’s economic role in subsistence is the key factor in the development of matrilocality (Linton 1936; Murdock 1949; Service 1962), on the supposition that, where women produce most of the food people eat—as in many horticultural societies—they or their relatives will be in a position to insist that their husbands be the ones to change residence at marriage. However, many cross-cultural tests of this hypothesis have failed to find a worldwide association between measures of female contribution to subsistence and matrilocality and matrilineality (Brown 1970; Divale 1974a, b, 1984; Ember and Ember 1971).

This failure may be explained by a confounding factor: women’s subsistence contribution is positively correlated with polygyny, especially non-sororal polygyny, in which co-wives are not sisters (Barry and Yoder 2002; Korotayev 2001, 2003; Low 1988; Schlegel and Barry 1986; White and Burton 1988). When women are largely self-supporting, acquiring multiple wives is less burdensome for men and may even be economically advantageous. There is clearly a conflict between non-sororal polygyny and matrilocality; a man will have a hard time meeting demands to reside with a wife’s kin if he has more than one wife and they come from different households. Some societies do manage a balancing act between polygyny and matrilocality. This can involve chiefs being polygynous and patrilocal, while commoners are monogamous and matrilocal (see below for the Mundurucú). In other cases, matrilocal marriages and matrilineal descent are the norm, but some men also manage additional non-matrilocal marriages with slaves or other women drawn from outside the kinship system (Douglas 1964). In general, however, non-sororal polygyny is strongly negatively associated with matrilocality and matrilineality. The result is that, in two multiple regression tests, using data from the Standard Cross-Cultural Sample (N=165) and the Ethnographic Atlas (N=609), female contribution to subsistence is associated with matrilocality (p<0.01), but only after controlling for non-sororal polygyny (Korotayev 2001, 2003).

This finding clarifies the relationship between the economics of subsistence and rules of residence and descent. It helps to explain why matricentricity is rare among plow farmers and pastoralists, where men are heavily involved in food production. But it leaves open the question of why, among those societies where females contribute most to subsistence, some follow the path of non-sororal polygyny and others, the path of matrilocality and subsequent matrilineality.

Kin selection and Matricentricity  

Another theory relates matrilineality—especially matrilineal inheritance of property—to paternity uncertainty (reviewed in Mattison 2011). In its simplest version, the theory is quantitatively implausible. Society-wide paternity certainty must be less than 0.27 for the average man to be more related to
his wife’s children than to his sister’s children (Greene 1978), which seems unlikely even where divorce and adultery are common. However, several authors have suggested that the interests of other relatives might tip the balance toward matrilineal inheritance even where paternity is not so uncertain. For example, in many matrilineal societies a man is not free to dispose of “his” property as he sees fit; some of his collaterals may have a voice in the matter (Flinn 1981; Jones 2000). If rights to dispose of property are held collectively, then two brothers deciding jointly will do better to favor their sisters’ children than their wives’ children as long as the paternity certainty falls below 0.47. With three brothers, the threshold for favoring sisters’ children is 0.61 (Jones 2000). More distant collaterals with a say over inheritance will further tip the balance toward matrilineal inheritance. Alternatively, grandparents or even older generations might be decisive (Hartung 1981; Holden et al. 2003).

A number of cross-cultural studies find an association between matrilineal inheritance and likely indicators of paternity uncertainty (Flinn 1981; Hartung 1981, 1985; Holden et al. 2003). But this finding falls short of explaining the distribution of matrilineality across cultures. Because matrilineal inheritance gives men less incentive to police their wives’ sexual behavior, the direction of causation may run from matrilineality to paternity uncertainty, instead of (or in addition to) vice versa. Hartung (1985) argues that the mutually reinforcing combinations of patrilineality and high paternity confidence or matrilineality and low paternity confidence can be alternative stable states.

In summary, economic and evolutionary theories have successfully identified several classes of societies which are unlikely to be matrilineal, including those with major male contributions to subsistence and/or strict policing of women’s sexual behavior. But they leave open the question of why, among societies where male subsistence contributions are limited, some are matrilineal and some, patrilineal.

A Context for Matrilocality: Frontiers and Group Formation

This rest of this article develops an alternative theory of matricentricity, which is meant to supplant, not replace, the preceding theories. The theory aims to combine earlier work in cultural anthropology with recent research taking an evolutionary approach to the historical dynamics of group formation and expansion. This research, reviewed below, contributes to the present work in several ways. It provides a larger context for previous anthropological work, situating processes operating in tribal-scale societies within a wider spectrum of social evolutionary phenomena. And it encourages a more careful and explicit formulation of the connections among group sentiments, political choices at the level of individuals and households, and social structural outcomes.

The starting point is the work of ecologist-turned-historical-sociologist Peter Turchin (2003, 2006, 2009), who has developed a theory relating state formation and the expansion of empires to systematic variation in the strength of group feeling. He argues that the strongest sentiments of in-group solidarity and the highest levels of in-group cooperation develop when there is conflict between groups that differ with respect to one or more major cultural markers, such as language, religion, or mode of
subsistence. As a result, the formation and expansion of states—which depend not just on coercion but on group loyalty among the politically active stratum of the population—operates with particular force along a particular kind of frontier, the “meta-ethnic frontier” where very different cultures clash.

Figure 1a and b illustrate the argument. They show how some cultural variable varies with geographic distance. For ease of exposition, culture and geography are each reduced to one dimension. In Fig. 1a, culture varies smoothly, so that each group is very similar to its neighbors. In Fig. 1b, however, culture varies discontinuously, so

**Fig. 1** The meta-ethnic frontier theory of state formation. Local groups or small-scale polities, shown by stars, vary in geographic position and culture. 

- **a** No meta-ethnic frontier. Culture varies smoothly with distance. A local polity may belong to one of several coalitions, shown by dotted lines, so larger-scale groups are unstable.
- **b** Meta-ethnic frontier. Culture shows a sharp discontinuity along a meta-ethnic frontier. Conflict along the frontier leads to formation of stable larger states or empires, shown by *solid lines*.
there is a zone where two neighboring societies with very different cultures adjoin—a meta-ethnic frontier. (Sometimes an uninhabited no-man’s land separates cultures along the frontier.)

According to the meta-ethnic frontier theory, even if the material bases of conflict and coalition building are similar in the two cases, group formation will proceed differently. In the first case, assuming there are competitive advantages to being part of a larger coalition, there will be little reason for any local group to attach itself to one coalition rather than another. Alliances will be shifting and evanescent. In the second case, however, politically active members of groups near the cultural divide will develop a strong sense of shared identity in opposition to the outsiders across the border. This identity will be the basis for the formation of larger enduring groups, with higher levels of cooperation.

In the case of state formation, meta-ethnic frontiers are zones in which small polities are most easily welded into larger states and empires. For a historical comparison that illustrates this theory, consider Italy and Iberia in the Middle Ages. Medieval Italy largely corresponds to Fig. 1a. Apart from Muslim and Byzantine enclaves in the far south, the Italian peninsula was religiously uniform, with only moderate and gradual geographic variation in language and other culture. Consistent with the theory, northern and central medieval Italy were divided into a large number of city-states in a shifting pattern of alliances with little effective impulse toward unification. Medieval Iberia, by contrast, especially from the eleventh century on, corresponds to Fig. 1b, with a sharp division between Muslim states in the south and Christian kingdoms in the north. This Muslim/Christian division counts as a meta-ethnic frontier, and, consistent with the theory, both Moorish and Christian Spain came to be ruled by just a few large states deriving considerable internal solidarity from interreligious warfare.

A test of the theory is afforded by a wider span of European history and geography (Turchin 2003). Let Europe be divided into 50 major geographic areas. For each of these areas, for each century from AD 1 to 1900, note whether it is a center of imperial state formation and assign it a frontier score depending on whether a major religious, linguistic, economic, or military frontier runs through it. (Clearly frontiers and frontier scores will shift over time with changes in religion, language, and economy.) The results are summarized in Table 1, based on data from Turchin (2003), with a new statistical analysis (Fisher’s exact test). The rise of empires is significantly and strongly tied to the presence of meta-ethnic frontiers, although not all such frontiers are centers of state formation. In a further test of the theory, Turchin shows that geographic barriers (mountains, seas, etc.) show weaker association both with ethnic frontiers and with state boundaries, but not enough to account for the results outlined above.

### Table 1: Frontiers and state formation

<table>
<thead>
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<tr>
<td>No empire</td>
<td>53</td>
</tr>
<tr>
<td>Empire</td>
<td>4</td>
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Data from Turchin (2003), reanalysis with Fisher’s exact test, 2-tailed, p<0.0001
Turchin’s theory is a theory of the origin of states, especially imperial states. It is supported by historical evidence from Europe, and from the pastoralist/farming frontier in Eurasia (Turchin 2009). But the same underlying principles may operate in non-state societies. Tribes and tribal segments, like states, may be in competition with one another, and success in competition may partly depend on internal solidarity. Tribal as well as state-level societies may find themselves facing meta-ethnic frontiers. In fact, cultural anthropologists have developed a theory of the origins and development of matrilocality and matrilineality that closely parallels Turchin’s theory of state origins and development. The theory and supporting evidence are summarized below.

Matrilocality and War on the Frontier: The Mundurucú Case

The Mundurucú Indians of the Brazilian Amazon illustrate how life along a meta-ethnic frontier can affect tribal social institutions and, more specifically, foster matrilocality. When they were studied in the 1950s (Murphy and Murphy 1974), they had been pacified, and their traditional social institutions were changing rapidly. But Murphy (1956, 1957, 1960) has reconstructed their earlier history, including patterns of warfare.

The Mundurucú were geographically far removed from their closest linguistic and cultural relatives. A series of migrations in the late eighteenth century had carried them hundreds of kilometers from their presumed homeland in Mato Grosso to the upper Tapajós River, resulting in a profound cultural divide between the Mundurucú and surrounding peoples (Murphy 1960).

Associated with this meta-ethnic frontier, a combination of external aggression and intra-tribal solidarity can be reconstructed for the nineteenth century. From the time they arrived at the upper Tapajós, the Mundurucú waged highly effective aggressive warfare against outsiders. Some of this warfare was carried out at the behest of colonial and national Brazilians in exchange for trade goods, but most was carried out by the Mundurucú on their own initiative. “[W]ar was considered an essential and unquestioned part of their way of life, and foreign tribes were attacked because they were enemies by definition” (Murphy 1957:1025). Warfare was motivated immediately by the desire to take enemy heads, whose magico-religious powers benefited the Mundurucú as a whole. It may also have been motivated more distally by ecological competition (Durham 1976).

The counterpart of this external aggression was a high level of within-group solidarity. During the nineteenth century, the Mundurucú, numbering about 5,000 and spread over at least twenty villages, did not fight wars with one another or carry out revenge raiding. Overt hostility within the tribe was limited and strongly censured. Ideologically, a stark distinction was drawn between the Mundurucú, regarded as kin, and outsiders, regarded as potential prey. Ritually, multiple villages were bound together through a complex of ceremonies. A rule of monogamy, except for chiefs, dampened sexual competition among men (Murphy 1957). Also, knowledge of genealogies, and the potential for segmentation along genealogical lines, was “suppressed . . . through a taboo on speaking the names of the dead by their living descendants” (Murphy and Murphy 1974:71).
Probably the central institution supporting Mundurucú internal peace and external aggression was matrilocal residence. Upon marriage, a Mundurucú man moved into his wife’s village, if it was different from his own, and took up residence with other in-marrying, unrelated men in a men’s house in the village center. As a result, brothers and other close male relatives were likely to be scattered among a number of villages. Chiefs were an exception to this rule: a chief’s wives came to live in his village.

Several lines of evidence suggest that the Mundurucú had adopted matrilocality recently, shortly after migrating (Murphy 1956). An account of an 1819 contact with the Mundurucú says that they were predominantly patrilocal, with men taking their wives to live with them after a period of brideservice. Also relevant, the Mundurucú, unusually, combined matrilocal residence with patrilineal descent. Men and women belonged to patrilineal clans, which were important in marriage and ritual life, although the rule of matrilocality meant that each clan was dispersed among a number of villages. Patrilineality has plausibly been taken to be a relic of an earlier patrilocal/patrilineal phase. Finally, linguistic evidence also implies that Mundurucú patriclans were formerly residential units.

Matrilocal, Group Solidarity, and Cross-Cutting Ties: The Theory

To understand how external challenges could lead to the adoption of matrilocal residence among the Mundurucú (and other peoples), it is useful to make a comparison with state societies. As discussed above, in state societies the external challenges that arise along meta-ethnic frontiers commonly result in state expansion and consolidation. Sometimes this involves polities under external threat coming together in a confederation. More often, external threats lead to the formation of empires, as weaker polities subordinate themselves to stronger ones on their side of the frontier rather than face enemies across the frontier alone (Turchin 2006).

Centralization is a characteristic response to external threats in state societies. But in tribal societies, where the machinery of centralized control is weak, local communities often adopt another solution: cultivating cross-cutting ties that strengthen their connections with neighboring communities within the tribe. As many anthropologists (e.g., Kramer and Greaves 2011) have recognized, matrilocal and matrilineal create particularly effective cross-cutting ties.

Inter-group alliance is generally strong and group-exclusiveness is weak in matrilineal systems. . . . Where intermarriage takes the form of an exchange of males, the cross-cutting ties which make for a criss-cross of reciprocal obligations are carried by the dominant sex. This implies more emphasis on intergroup alliance than in a system where the cross-cutting ties are carried by the weaker sex . . . (Douglas 1969:126).

If there is any advantage in a descent system that overrides exclusive, local loyalties, matriliny has it (Douglas 1969:128).
Douglas emphasizes the value of economic cooperation among males outside the local group. But the point holds even more strongly for military cooperation, an overwhelmingly male activity.

In principle, a tribe like the Mundurucú faced with external threats might adopt a rule of matrilocal residence through a collective decision. More plausibly, matrilocality may result from the piecemeal decisions of individual households and villages in the face of external threats (Divale 1984). Consider a household near a frontier trying to secure its safety. If the household imposes a matrilocally rule, insisting that men marrying its daughters must move in, it gains a son-in-law for protection with each daughter’s marriage. Of course if other households impose the same rule, the sons of the household will have to move out when they marry, but (plausibly) they will still be available to defend their home village in wars against tribal outsiders. Local units imposing a rule of matrilocal residence can gain two sets of male defenders, a set of sons-in-law connected by residence and marriage and a set of sons still connected by consanguinity. However, this assumes that warfare is external, involving large forces drawn from multiple villages. The situation is different in the case of internal war, where one local group feuds with neighboring local groups. In this case a son, born in the local group, is a more dependably loyal asset than a son-in-law, born in a potentially hostile neighboring group. In societies with internal warfare, this logic favors patrilocality, with overlapping rather than cross-cutting ties among men. (For evidence that internal war causes patrilocality rather than vice versa, see Ember 1974. For evidence that ties through outmarrying daughters do not have the same integrating effect as ties through outmarrying sons, see the next section.)

Thus the Mundurucú case suggests that the adoption of matrilocal residence may be to some tribal societies what state expansion and centralization are to state societies: an adaptation to life along a meta-ethnic frontier.

**War and Matricentric Social Organization: Cross-Cultural Evidence**

The connection between matrilocality, external warfare, and frontiers is found not just among the Mundurucú, but across cultures. The cross-cultural evidence also supports some additional conclusions about differences between internal and external war, and the historical dynamics of matrilocality and matrilineality.

The connection between external warfare and matrilocality is the flip side of one of the best-supported hypotheses in the cross-cultural literature, the theory of fraternal interest groups or FIGs (van Velzen and van Vetering 1960). FIGs are local groups of related co-resident males. The presence of FIGs, indexed by patrilocality, is associated with frequent feuding, polygyny (Otterbein and Otterbein 1965), and internal warfare (Otterbein 1968, 1970; van Velzen and van Vetering 1960), whereas the absence of FIGs, indexed by matrilocal residence, is associated with external war and frequent war (Divale 1974a, b; Ember and Ember 1971).

The two types of warfare, internal and external, differ in several respects. Internal war, associated with FIGs, is more likely to be limited war; external war is more likely to be total war. Thus Tefft and Reinhardt (1974) show that internal war correlates with the presence of peacemaking mechanisms and external war with their absence. “The apparent reason for this is that cultural homogeneity provides a common ground for
successful peace negotiations” (1974:168). Divale et al. (1976) replicate this finding on a different cross-cultural sample, and they also show that internal war and patrilocality are associated with stable peace whereas external war and matrilocality are associated with unstable peace. This is consistent with the general argument about the intensification of group conflict across meta-ethnic frontiers: across frontiers, there is less room for compromise, negotiation, and limits in warfare.

This may explain another finding—or, rather, non-finding—in the literature on warfare. Thus far I have discussed how the cross-cutting ties generated by matrilocality and matrilineality are associated with internal peace and external war. But I have ignored a different set of cross-cutting ties associated with patrilocal residence. In many patrilocally societies marriages are exogamous—women marry outside their clan and/or natal community. If women leave their natal groups to marry into neighboring groups, then each local group will have daughters and sons-in-law among their neighbors. It is an old argument in anthropology (Tylor 1888) that the marital alliances established through exogamy make for peace, according to the principle “marry out or be killed out.” Yet this argument finds no cross-cultural support: neither clan nor local exogamy is significantly associated with a low frequency of internal warfare; only matrilocality makes a difference (Kang 1976, 1979). The picture that emerges from this research is that, although the dispersal of women through marriage alliances in patrilocally societies may play a role in limiting and regulating internal warfare, it is only where men are dispersed through matrilocal residence that we find an absence of internal war.

Matrilocality shows a broader association with internal solidarity. Turning from warfare to political organization more generally, Paige (1974) and Swanson (1969) show that patrilocality and matrilocality are strongly associated with two different types of non-state polity: patrilocal with “factional” polities, matrilocal with “communal” polities. “Factional polities permit or even encourage the pursuit of special interests, frequently representing these interests at the highest levels of the polity. Communal polities do not regard the political expression of special interests as legitimate and do not permit such interests representation at any level of decision making” (Paige 1974:302). The Mundurucú are an instance of a communal polity.

Thus far I have reviewed data relating matrilocality to internal peace and external warfare, but there is further evidence that this complex is also associated with the presence of meta-ethnic frontiers, especially as they result from a history of migration (Divale 1974a, 1984; Ember 1974; Ember and Ember 1971). Table 2, based on Divale (1974a) shows the number of societies practicing matrilocal and patrilocal residence in a subsample of the Human Relations Area File–Quality Controlled sample (N=41), in relation to the absence or presence of frontiers. Frontiers are measured by whether neighboring groups speak a closely related language; this measure correlates almost perfectly with another measure based on recent history of migration (Divale 1974a). The data for tribal societies in Table 2 (reanalyzed with Fisher’s exact test) show the same pattern as those for state societies in Table 1. The migration hypothesis of matrilocality and the theory of imperial state formation along meta-ethnic frontiers may involve the same underlying process. In both cases, violent encounters along a cultural frontier encourage the formation of larger groups with greater internal solidarity and reduced within-group conflict.
Both Turchin’s and Divale’s theories have implications not merely for synchronic social variation, but for long-term historical dynamics. For tribal societies, Divale argues for a long-term cycle in social organization, following the hypothesis that changes in residence generally precede changes in descent group organization (Murdock 1949) so that “most if not all matrilineal societies were once matrilocal at some point in their history” (Gough 1961:553). The cycle is laid out along the vertical axis in Fig. 2. In the first phase of the cycle, a patrilocal, patrilineal population finds itself facing a major cultural frontier as a result of migration. Its initial response is a shift to matrilocal residence, with patrilineal descent groups persisting—the situation of the Mundurucú. After an interval, patrilineal descent groups lose their original political functions and fade away, resulting in a matrilocal society without patrilineal or matrilineal groups. Eventually, residential groups give rise to lineages and clans, resulting in a society in which matrilocal residence combines with matrilineal descent groups.

However, the cycle may continue. The initial sharp cultural differences between the society and its neighbors may fade over time, and the internal solidarity of the

### Table 2  Frontiers and matrilocality. The association between presence or absence of linguistic frontiers and patrilocal or matrilocal residence in a subsample drawn from the Human Relations Area File (see text for details). Data from Divale (1974a), reanalysis with Fisher’s exact test, 2-tailed, \( p=0.0001 \)

<table>
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<th>Language similar to that of immediate neighbors?</th>
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<th>No (= frontier)</th>
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<td>9</td>
</tr>
<tr>
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<td>0</td>
<td>10</td>
</tr>
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### Fig. 2  Matricentricity and migration: The main sequence. Thirty-three societies are plotted according to the time since a major migration event (i.e., the arrival of the society or a hostile neighbor in its present location), and mode of residence/descent. The vertical axis gives, from top down, the “main sequence” of expected transitions, assuming that migration results in an initial shift to matrilocality and that changes in residence are typically followed by changes in descent rules (Divale 1984; Murdock 1949). The line runs through the median for each residence/descent mode. On average, as predicted, the longer since a society has migrated, the further along in the predicted sequence it is. Data from Divale (1984), reanalysis with Spearman’s rank correlation test, 2-tailed, \( \rho=0.57, \ p=0.0005 \)
society may decline. This can eventually result in the development of the residential pattern known as avunculocality, in which a young man and his wife reside with the man’s mother’s brother—his closest senior male matrilineal relative. Avunculocality is a compromise between the matrilineal principle and pressure to keep related males residing in one community.

A further stage involves a shift to patrilocal residence, with matrilineal descent persisting: perhaps regulating marriage and ritual life, but of diminishing importance. Finally, the disappearance of matrilineages leads to a patrilocal, bilateral society, which may develop into a patrilocal, patrilineal society.

The whole sequence follows from the hypothesis that changes in descent follow changes in residence, with some lag. [Jordan et al. (2009) provide evidence supporting the hypothesis for the Austronesian culture area.] If the migration hypothesis of matrilocal is correct, then we expect successive combinations of residence and descent to be associated with successively more distant migration dates. Figure 2 shows this for a stratified sample of 33 societies drawn from the Standard Cross-Cultural Sample classified by residence, descent, and date of migration into present homeland (Divale 1984). A line connecting median migration dates for five combinations of residence and descent shows that the medians fall in the expected order, and a reanalysis of Divale’s data using Spearman’s rank correlation coefficient confirms significance.

Demic Expansions: The Geography of Matrilinearity

The working of historical dynamics over time can generate geographic patterns. Consider first an example involving state-level societies. The contrast between a disunited Italy and a more unified Iberia presented above is part of a broader pattern of core and periphery in the political geography of western and central Europe (Turchin 2006). In early modern times, at the center of this region (northern and central Italy and western Germany) lay a band of territory politically fragmented into a bewildering profusion of city-states, small principalities, and minor kingdoms. Surrounding this core was a collection of large states, including Spain, France, and England in the west, Denmark and Sweden in the north, and Prussia, Saxony, and Austria in the east. This pattern can be seen as the outcome of a process of frontier state formation working for more than a millennium. The central region was the imploded core of the old Roman and Carolingian empires, while the large states on the periphery grew up just inside or outside the old Carolingian marches.

In the rest of this article I consider another set of geographical patterns, involving kinship systems in non-state societies. I consider how a process of frontier expansion—demic expansion of small-scale tribal societies—may have fostered a particular social institution—the matrilocal tribe—with long-lasting consequences for social organization over large areas. This section offers some general remarks; the next two sections review two major expansions.

In the past few decades, it has become increasingly possible to write the prehistory of the past 10,000 years as a story of major demic expansions, in which founding populations have spread over larger areas, carrying genes, languages, and kinship systems with them, while changing and mixing along the way (Bellwood...
2005; Cavalli-Sforza et al. 1994; Diamond and Bellwood 2003; Jones 2003; Renfrew 1990). Many, but not all, of these expansions have been associated with the spread of farming. Farming typically has not spread through gradual acculturation and the diffusion of new crops and techniques. The division between agriculturalists and hunter-gatherers is more often a sharp frontier than a gradual cline. Bellwood (2005:27) shows that among societies in the ethnographic record there is usually an either/or commitment to one way of life or the other. The percentage of the diet deriving from herding and agriculture, rather than foraging, is bimodally distributed.

Also, the movement of the farming/foraging frontier has often not been a peaceful process. Keeley (1996), in his study of war before civilization, argues that frontiers between farmers and foragers, like other cultural frontiers, are often unusually violent places. In the historic and ethnographic record, he cites evidence of high-intensity warfare between foragers and their farming or pastoralist neighbors, including Bushmen versus Bantu and Khoi-Khoi, Navajo versus Tewa, Apache versus their neighbors, and Ainu versus Japanese. In the archaeological record, he cites evidence of intensive military preparations and war along forager/farmer frontiers in eastern and midwestern North America and in Neolithic Europe. In some cases long-term contact between farmers and foragers leads to stable patterns of exchange and/or subordination, but warfare is particularly intense where frontiers are shifting, with farmers moving into foragers’ territory.

In short, major demic expansions have produced just the conditions that should be associated, according to Turchin’s theory, with increased group size and group solidarity and, according to Divale’s theory, with matrilocal residence. Both the origin and the maintenance of matrilocal organization may be favored along the leading edge of a demic expansion. In discussing the Mundurucu case, I have shown how societies may shift to matrilocal organization as a part of complex institutions and values associated with internal cooperation and external warfare. And whatever the reason for this initial shift, a further boost to matrilocal organization may come as matrilocal societies take the lead in expansion as a result of the military advantages of this social organization. (Although more evidence is needed, Divale’s [1984] data show that shifts to matrilocal organization occur both among societies moving into new territory and among the earlier inhabitants they end up fighting, implying that external warfare is involved in the origin, not just the maintenance, of matrilocal organization.)

In the next two sections I evaluate the hypothesis that expansion along a meta-ethnic frontier has been associated with the spread of matricentric social organization, with lasting consequences for the spatial patterning of kinship systems in the ethnographic present. The hypothesis predicts, minimally, that matricentric social organization will be reconstructable as the ancestral state at least for the period when societies have been undergoing frontier expansion, and perhaps as far back as the beginning of the expansion, with patrilocal and patrilineality adopted subsequent to the frontier phase. On the other hand, any demonstration that societies have largely adopted matricentric social organization only after the end of the frontier period in response to local environmental or economic circumstances would count against theory. Also in favor of theory is ethnohistoric or other evidence that external warfare was important in the period of frontier expansion.

The discussion focuses on two of the major areas of matricentric social organization in the Old World, the matrilineal belt of Central Africa and the matricentric zone of
insular Southeast Asia and Oceania. These involve perhaps the two best-understood prehistoric demic expansions, and a great deal of work has been done reconstructing earlier kinship systems in the two language families. Marck (2008) and Marck and Boeston (2010) have already noted the possible relevance of Divale’s work here; the review below extends this work, citing a wider range of evidence.

The Bantu Expansion and the Matrilineal Belt

Running from western and central Congo, through Angola, Zambia, and Malawi to northern Mozambique and southern Tanzania is sub-Saharan Africa’s “matrilineal belt” (Mace and Holden 1999; Richards 1950). The great majority of traditional societies in this area have matrilineal descent groups, with residence ranging from matrilocal to avunculocal to patrilocal, and often variable within one society. Societies with double descent—both matrilineal and patrilineal descent groups—are found on the southern edges of the belt. Outside this area, a scattering of African societies are matrilineal, but most are patrilineal or (less often) bilateral.

Ecology and modes of subsistence have played a role in delimiting Africa’s matrilineal belt. In particular, where cattle herding has spread, most societies have shifted to patrilineality; this has happened especially in the Great Lakes region and in southern Africa. The matrilineal belt, by contrast, is an area in which cattle herding is comparatively unimportant. Subsistence involves the cultivation of roots, tree crops, and grains, without draft animals, and with women doing most of the work (Aberle 1961; Holden and Mace 2003, 2005).

Horticulture alone cannot explain the matrilineal belt. In sub-Saharan Africa as a whole, hoe cultivation and heavy female contributions to subsistence are as likely to be associated with patrilineality (and generalized polygyny) as with matrilineality.

In the west and central African tropical rain forest zones, . . . cattle are rare but patrilineal traditions persist (Lancaster 1976:545).

. . . in Africa . . . values and attitudes connected with simple horticultural subsistence have evidently not been effective in determining social and political forms in any direct and simple way. A simple horticultural subsistence base may be found with any kind of social and political system (Lancaster 1976:555).

Here I consider another factor that may be involved in the predominance of matrilineality over this large area: the matrilineal belt is the southern edge of the great demic expansion that carried Bantu farmers over most of subequatorial Africa.

The Bantu expansion began around the Nigeria/Cameroon border area around 3000 BC (Fig. 3). The early Bantu were farmers, with a package of domesticates, including African yams, oil palms, and guinea fowl, adapted to the moist tropics.

At this time depth, a migration theory of matrilocality would not predict uniform matrilocentricity today, and Bantu-speaking societies in the ethnographic present include both patrilineal and matrilineal societies.
Several methods have been used to reconstruct the Proto-Bantu social system. Holden and Mace (2003, 2005) apply maximum likelihood statistics to a language tree for Bantu to infer ancestral states from current states. They conclude that “phylogenetic reconstruction provides no clear indication of descent among the earliest Bantu-speaking populations. They may have been either matrilineal or patrilineal, or . . . had other descent rules” (2005:226). Other researchers have used other data, especially reconstructed kin terms and culture history, to reach more definite conclusions. Vansina’s (1990) influential reconstruction posits non-unilineal kinship in early Bantu society—based partly on the absence of unilineal distinctions in Proto-Bantu cousin terms—with villages led by chiefs with no fixed line of descent. However, the most recent research, using a wider range of kin terms, paints a different picture. Reconstructed aunt and uncle terminology for early Bantu is bifurcate merging (Mother = Mother’s Sister ≠ Father’s Sister, Father = Father’s Brother ≠ Mother’s Brother), strongly diagnostic of unilineal descent, either patrilineal or matrilineal.

Fig. 3 The Bantu expansion and the matrilineal belt. Arrows show major routes of expansion. Disagreements (dashed arrows) are greatest regarding the early splits in the tree, and the sources of languages in the western part of the matrilineal belt. Based on references in text.
matrilineal (Hage and Marck 2010). Ehret (1998) argues more specifically for matrilineality, based on the semantics of reconstructed relict terms for descent groups, which are derived from words for belly and house. “Belly” obviously implies matrilineal descent. “House” may too: “‘house’ in its African milieu is commonly also an idiom of female connotation. Widely in tropical Africa, possession of a house is the characteristic feature of being a wife and a mother” (Ehret 1998:151).

More immediately relevant are kinship systems among the Bantu subfamilies that settled the matrilineal belt. I begin where there is most agreement, with the expansion of the East Bantu subfamily in East Africa. The likely homeland of Proto-East-Bantu is the western edge of Africa’s Great Lakes region, around 1000–500 BC (Ehret 1998; Nurse and Phillipson 2003; Phillipson 1993). The earliest splits within the subfamily point to this location (Ehret 1998; Holden 2002; Rexová et al. 2006), and the archaeological Urezewe culture is likely a material expression of this phase (Phillipson 1993). The next 1,500 years saw an enormous expansion of East Bantu languages over much of eastern and southern Africa south of the equator. This matches the appearance of the highly uniform Chifumbaze archaeological culture over this area, almost certainly involving a substantial demic component (Phillipson 1993). Early Chifumbaze settlements were thinly scattered and coexisted with other cultures for much of the first millennium AD before the area was definitively “Bantuized.” The Bantu/pre-Bantu frontier, in other words, persisted long after the arrival of the East Bantu.

Over most of this area, historic East Bantu societies were matrilineal, commonly with men performing brideservice for, and residing with, their wives’ families. Two areas are exceptions to this rule, the Great Lakes region, and southern Africa; in both, patrilineality was adopted sometime after cattle herding. This geographic distribution argues for matrilineality as the ancestral state for early East Bantu speakers in the matrilineal belt (Marck et al. 2010), although the evidence from cultural phylogeny is again ambiguous (Holden and Mace 2003, 2005). Reconstructed kinship vocabulary for Proto-East-Bantu, as for Proto-Bantu, is bifurcate merging, also implying unilineal descent, with affinal equations implying a norm of cross-cousin marriage (Marck et al. 2010).

The origins of Bantu settlement on the western side of the matrilineal belt are less well understood, and there is less agreement about the language tree (Ehret 1998; Holden 2002; Rexová et al. 2006; Vansina 1990). The expansion is roughly contemporary with the East Bantu expansion, and here too it seems to have involved early and persisting matrilineality (Ehret 1998). The expansion of Bantu in the west involved conflict with earlier inhabitants, including pygmies, Bushmen, and populations of fishing folk. As in the east, the ethnic frontier persisted long after the first arrival of the Bantu.

The original expansion of Western Bantu speakers resulted in a very thin occupation of the area. . . . Pressure from the autochthones was negligible because in most cases the numbers of both farmers and autochthones were puny and their preferred environments did not overlap very much [Vansina 1984:138–139].

The [later] spreading of villages all over the landscape was not as peaceful as the first immigration of farmers had been. Some oral traditions recall wars
between “pygmy” hunters and farmers, and a glance at the distribution of pygmies shows that they were driven out of large areas, in many of which their former presence is still remembered. . . . [Farther south] San hunters, hemmed in by cereal growers, moved away, sometimes fought them, often intermarried. Symbiotic relationships did not fully develop here (Vansina 1984:144).

In summary, the evidence—not unanimously, but on balance—points to matrilineality from early in the history of the Bantu demic expansion, and also as the likely ancestral state among founding populations in the current matrilineal belt, with shifts to patrilocality in some of the earliest areas to be settled, and among cattle herders. There is also evidence for external war in the settlement of the matrilineal belt. However this conclusion is very tentative; more work needs to be done.

**Matricentric Austronesians**

In their review of worldwide geographic variation in kinship and social structure, Burton et al. (1996) identify a “South East Asia and Pacific” culture area, the most consistently matricentric of the world’s eight or nine major culture areas. The South East Asia and Pacific area is home to several major language families; the most widespread is Austronesian, stretching from Taiwan through island Southeast Asia and some of Melanesia, and from Madagascar in the west to Micronesia and Polynesia in the east.

Linguistic, archaeological and genetic data provide a consistent picture of Austronesian expansions (Bellwood 1997; Blust 1976; Diamond and Bellwood 2003; Gray et al. 2009; Pawley 2002; Pawley and Ross 1993). The homeland for Austronesian is on the island of Taiwan, where the most divergent branches of the family survive (Fig. 4). Sometime after 3000 BC, Austronesian speakers moved to the Philippines, bringing a sub-division of the language family, Proto-Malayo-Polynesian, with them. By about 2000 BC they began to spread beyond the Philippines, some heading to western Indonesia, including Borneo and Sumatra, and points west, others to eastern Indonesia and points east. The eastern stream reached Western Melanesia by around 1500 BC. Their arrival marks the advent of the Lapita archaeological culture and the Oceanic language family. From there, the descendants of the Lapita culture colonized Polynesia and eastern Micronesia (Hurles et al. 2003; Kirch and Green 2001).

The Austronesian expansion was facilitated by agriculture. Rice was important in the early stages, root and tree crops, including taro, bananas, and coconuts, in the later stages. Livestock included pigs and chickens. Some of the area colonized by the Austronesians, especially in island Southeast Asia, was already inhabited by hunters and gatherers. In some places, Austronesians were preceded by other farmers—speakers of Austro-Asiatic languages in some of Southeast Asia, and of Papuan languages in and around New Guinea. In farther Melanesia, however, and in Micronesia and Polynesia, Austronesians were the first arrivals.

Kinship in the Austronesian world today is highly variable, including matrilineal, patrilineal, and cognatic systems, and a variety of residence and marriage rules. The distribution of systems is very patchy and reflects a complex history. Rivers (1914), one of the earliest scholars of the area, argued that relics of matrilineal descent are found
very widely in the area, implying an early matrilineal phase. Several later authors argued for initial cognatic descent, with both patrilineal and matrilineal descent groups arising with increased social complexity (Murdock 1949, Goodenough 1955). The most recent evidence however, supports Rivers’s hypothesis of ancestral matrilineality.

Some of the evidence comes from reconstructed kinship terms—specifically, terms for siblings (Blust 1980a, 1993, 1996). The reconstructed sibling terms for Austronesian include a parallel-cross distinction (i.e., a distinction between same-sex and opposite-sex siblings). Parallel-cross distinctions are strongly diagnostic of unilineal—especially matrilineal—descent (Murdock 1968), and the distributional evidence favors matrilineality rather than patrilineality as the ancestral state.²

More support for early Austronesian matricentricity comes from an analysis of cultural phylogeny, which finds that, in the likeliest reconstruction of residential patterns, based on the linguistic phylogeny “matrilocal residence is ancestral in Austronesian society” (Jordan et al. 2009) and that matrilocality is especially secure in Proto-Malayo-Polynesian.

Within Austronesian, Proto-Oceanic kinship and relations with outsiders require particular consideration. Hage (1998a, b, 1999) and Marck (2008) argue, based on the distribution of matrilineal and other descent groups in the ethnographic present, that ancestral Proto-Oceanic society was matrilineal. Jordan et al. (2009) find equivocal support for patrilocality at the root of Oceanic. However, they do not regard their findings as inconsistent with those of Hage and Marck. Instead they argue that the shift to patrilocality in the Proto-Oceanic phase was a secondary development, occurring in tandem with assimilation and amalgamation with non-

² Murdock (1968) on sibling terminology implicitly contradicts his earlier hypothesis (1949) that ancestral Austronesian kinship was non-unilineal.
Austronesian groups. Genetic studies shed light on this issue. Polynesians and other speakers of Oceanic languages derive their genetic ancestry from both Asia and Melanesia, but this inheritance is strongly skewed by sex. Most of the matrilineally inherited mtDNA variants derive from Asia, whereas most patrilineally inherited Y chromosome variants derive from Melanesia, suggesting that matrilineal, matrilocal Austronesian descent groups were absorbing significant genetic contributions from outside males (Hage and Marck 2003). Marck (2008) estimates that over the period of contact between Austronesians and non-Austronesians in Melanesia, about one male in ten per generation of Polynesian ancestors was indigenous non-Austronesian. The comparable figure for females was less than one in a hundred. Unusually, then, in the encounter between Austronesian and pre-Austronesian farmers, the new arrivals incorporated males, but not females, from the original inhabitants at moderate rates, and in many cases they eventually adopted patrilocal as well.

In other regions, however, evidence suggests that the Austronesian expansion was not peaceful. In the recent past, many Austronesian peoples outside Oceania engaged in headhunting, often associating the taking of heads with the fertility of livestock and crops. The reconstructed vocabulary implies that headhunting goes back to an early stage in the development of Austronesian.

[T]he expression *par excellence* of warfare in at least the non-Oceanic portion of the Austronesian world is the taking of heads. In many of the more traditional societies of this area the concepts “war” and “headhunting” are represented by a single morpheme. . . . [W]hat is most remarkable about headhunting in the Austronesian world . . . is the matrix of magico-religious concepts in which the practice is inextricably enmeshed (Blust 1980b:231).

Headhunting persisted in many Austronesian societies even after shifts away from matrilocal, but early Austronesian groups would seem to have been strikingly convergent with the Mundurucú. Both were matricentric populations who treated outsiders as appropriate targets for religiously inspired predation.

In summary, modern Austronesian societies show a mixture of residence and descent rules, but multiple lines of evidence point to ancestral matrilocality and matrilineality, with patrilocality and patrilineality developing only later, after the initial settlement. Conflict with pre-Austronesian inhabitants was probably widespread although the encounter in Melanesia may have been different. In several cases, Austronesian speakers expanded into empty territory. In Polynesia, matrilineality largely disappeared early or was not initially present. In Micronesia, ancestral matrilineality persisted.

**Conclusion**

Many early theories argued that matrilineality is a stage in unilineal social evolution (Morgan 1985 [1877]). Stage theories of matrilineality are probably untenable (Aberle 1961), but the evidence that many currently patricentric societies were more matricentric in the past still needs to be accounted for. The present theory argues that
matricentric social organization is not a universal stage but—very often—a phase in a particular mode of expansion. The theory implies, minimally, that when matricentric social organization is widespread over large areas, it will commonly be found to trace back to demic expansions of matricentric societies. Inconsistent with the theory are cases in which widespread matrilocality and related institutions are adopted in parallel, after demic expansions have ended, and in response to economic pressures unrelated to frontier politics. The theory further implies that the frequent presence of matricentricity at or near the root of demic expansions is not a coincidence: expansions along cultural frontiers favor shifts to matrilocal, and matrilocal eventually is favorable to expansion, because matrilocal increases internal solidarity and success in external warfare. The theory does not imply that differences in social organization alone drive major expansions; advances in food production have clearly been the most important factor. And it leaves as a topic for further investigation the relative contributions of (a) initial switches to matrilocal and (b) more rapid expansion of matrilocal societies in the spread of matrilocal.

Both the Bantu and Austronesian cases seem to be consistent with these initial expectations. Clearly, however, far more evidence will be needed to establish whether the political and military advantages of matricentric social organization have played a major role in its origin, spread, and current distribution. Several lines of investigation suggest themselves. First, competing theories of matricentricity deserve further testing; it may turn out that finer-grained analyses of economic and ecological variables will do what earlier analyses have not, rendering the explanation proposed here unnecessary. Second, because the present theory appeals to the deep history of kinship systems to explain variation in the ethnographic present, more quantitative analysis is needed to test whether the alleged long cycle from matrilocal to matrilineal and back to patrilocal is real, how regular it is, and how consistent across culture areas. The seemingly rare but consequential first step in the cycle—the transition to matrilocal—deserves particular attention. Third, one of the weakest lines of evidence in the present article relates to past warfare. A great deal of relevant information is now scattered in the literature of archaeology, historical linguistics, and ethnohistory. It is hoped that work like the present will encourage area specialists to undertake more cross-disciplinary integration of available information with an eye to hypothesis testing.

Finally, this article has sacrificed breadth of coverage to review in depth just two major demic expansions. An obvious next step is to extend the analysis to other matricentric areas, including mainland Southeast Asia, the Na Dene culture area in North America, eastern North America, and lowland South America, to discover whether the postulated complex of demic expansion, external warfare, and ancestral matrilocal is found in these cases. The analysis of additional independent cases can help to address the issue of shared history among the matricentric societies considered here.

Conversely, the investigation of population spreads not involving matrilocal tribes may help to refine the theory. I began this article by noting that Sahlins (1961) argued for a different mode of expansion operating in some tribal societies; I conclude by comparing the matrilocal tribe and the segmentary patrilineage as organizations of expansion.

Given what has been said about the advantages of matrilocal organization in external warfare, why would any expansionist society be organized around...
segmentary patrilineages? In some cases, the mode of subsistence pushes a society in that direction. For example the Nuer, one of Sahlins’s cases, were heavily dependent on cattle herding, with the expected organizational correlates: patrilineality, bride-wealth, and internal warfare. But another factor may be important as well: matrilocal societies seemingly face an upper size limit. The matrilocal tribe rarely exceeds a population of 21,000 (Ember 1974). Sahlins’s other case of segmentary lineage organization, the Tiv, numbered about 700,000, making them unlikely candidates for matrilocality in spite of a subsistence regime similar to that of many matrilocal peoples.

An upper ceiling on the size of matrilocal groups is not surprising, given the nature of social solidarity in matrilocal societies. Matrilocality produces cross-cutting ties, through males born in one community and residing in another. With increasing group size, there is less chance that such ties will operate between any given pair of communities. The brakes on internal conflict are correspondingly weaker in large societies. Large tribal societies usually have internal warfare, which increases the pressure on local communities to keep sons at home.3

Thus the matrilocal tribes considered here and the segmentary lineages considered by Sahlins embody different trade-offs between solidarity and size. Matrilocality is associated with greater solidarity, but more limited scale. Segmentary patrilineages suffer more internal conflict but can potentially scale up to enormous sizes. The largest patrilineal descent groups in Africa and Asia vastly exceed the size of any matrilocal tribe. Past a certain point, an increase in the scale of tribal social organization results in matrilocal tribes being edged aside by looser but larger patrilineal organizations. The trade-off between solidarity and social scale stems from inherent constraints on social order in tribal society. This trade-off can only be overcome by moving beyond tribal social organization and developing a new institution—the state.

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3 Low population density can also weaken group solidarity. Societies with scattered populations—many hunters and gatherers, for example—have a difficult time maintaining internal peace even when their numbers are small (Ember 1974).


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