# Kinship-based politics and the optimal size of kin groups

**E. A. Hammel***

Departments of Demography and Anthropology, University of California, Berkeley, CA 94720-2120

Contributed by E. A. Hammel, June 30, 2005

**Kin form important political groups, which change in size and relative inequality with demographic shifts. Increases in the rate of population growth increase the size of kin groups but decrease their inequality and vice versa. The optimal size of kin groups may be evaluated from the marginal political product (MPP) of their members. Culture and institutions affect levels and shapes of MPP. Different optimal group sizes, from different perspectives, can be suggested for any MPP schedule. The relative dominance of competing groups is determined by their MPP schedules. Groups driven to extremes of sustainability may react in Malthusian fashion, including fission and fusion, or in Boserupian fashion, altering social technology to accommodate changes in size. The spectrum of alternatives for actors and groups, shaped by existing institutions and natural and cultural selection, is very broad. Nevertheless, selection may result in survival of particular kinds of political structures.**

demography | selection

Demographic fluctuations affect the composition of kin groups (1). Positive shocks increase numbers of kin per person but decrease inequality of kin distributions and vice versa. Kin are the main source of political support and action in the small societies that characterized >90% of human history and still predominate in many societies, including segments of larger societies. Fluctuations in the mean supply of kin and the inequality of kin distributions give political actors opportunity to consolidate their positions and to select or alter cultural institutions that give advantage. Demographically induced fluctuations in kinship distributions may have been important environmental factors in natural and institutional selection as well as in particular historical events. However, any intrinsic directionality in selection is subject to existing local institutional and environmental factors.

This article presents a formal model of kinship factors, first focusing on a microeconomic analog, and then taking a broader macroeconomic and ecological perspective. It then discusses some ethnographic examples and offers conjectures on implications for the development of political institutions.

## A Formal Model of Kinship Politics

Each political actor is a member of a kin group. Each kin group can have from zero to some number of additional persons. Any member can be thought of as the principal actor in the group, or the group can be thought of as an entity. Each group is, in principle, nested, with superordinate levels at greater collaterality. The model is unilineal, agnatic, and segmentary.[†] Thus, a set of agnatic male second cousins may consist of more than one set of agnatic male first cousins, which may consist of more than one set of brothers. At any level, groups are assumed to be mutually exclusive; for example, Ego cannot belong to more than one set of agnatically related brothers. At any level, groups may compete for dominance, regardless of whether they are subsumed under a broader group; for example, two sets of brothers may compete, whether or not they are jointly cousins. Competition may occur across levels; for example, a set of brothers may compete with a set of cousins unrelated to them. Competition between subsets of equivalent level in different supersets implicates any other subsets of those supersets. Thus, if $A$ has a brother $B$ and two cousins, $C$ and $D$, and if $A$ disputes with $C$, $B$ and $D$ are the allies of $A$ and $C$, respectively. An appropriate analogy to segmentary organization is the familiar taxonomic diagram. This model is used partly for convenience but also because males have been the principal political actors in most societies, and most societies display an agnatic bias. However, not all such societies are strictly segmentary.

There are several key questions about kin-based political groups.

- Demographic conditions change their size and the inequality of their distribution. What is the calculus of optimality? Under what demographic conditions and consequent kinship distributions are political outcomes changed, and in what way, and for whom? What are the implications for institutional change?
- What are the implications of different schedules of MPP for kin group dominance?
- What are the potential demographic and technological responses to changes in political position?

I approach these questions, inspired by Chayanov (2–4), Sauvy (5), and Lee (6).

## The Microeconomics of Kinship Politics

I build the argument based on ideas of marginal productivity, declining returns, and economies of scale. By analogy with the marginal product of labor (MPL), imagine a marginal political product (MPP) equal to the worth of the next ally. MPP can take many forms. It can be the number of stones thrown, the number of accurate arrows launched, the intimidation of group size, or power or ritual dominance. The shape of the schedule of MPP will depend on many factors. Just as the level of MPL depends on resources and the technology of exploitation, the level of MPP depends on the political environment and on the social technology ("culture" and "institutions") that govern expectations of support between persons and control of their behavior. Emphasis here is more on shape than on level. As kin increase, MPP will increase in response to economies of scale and then decrease with diminishing returns. For example, in tribal or clan warfare, the prospect of success is enhanced by a larger number of allies and further enhanced by the ability to coordinate action, but it will be eroded if numbers reach a level at which coordination with limited means of communication becomes ever more difficult and the moral imperative to assist kin weakens. There are also costs. These costs are likely to be those of reciprocal

Abbreviations: MPP, marginal political product; APP, average political product; TPP, total political product.

*E-mail: gene@demog.berkeley.edu.

[†]Definitions are as follows: lineal, related by direct ascent/descent; unilineal, lineal through one sex only; collateral, related through a sibling; agnatic, related only through males; uterine, related only through females; cognatic, related through males or females. First cousins have a common grandparent; second cousins have a common great-grandparent. "Segmentary" means that living kin are grouped according to the generational level of their common ancestor.

© 2005 by The National Academy of Sciences of the USA

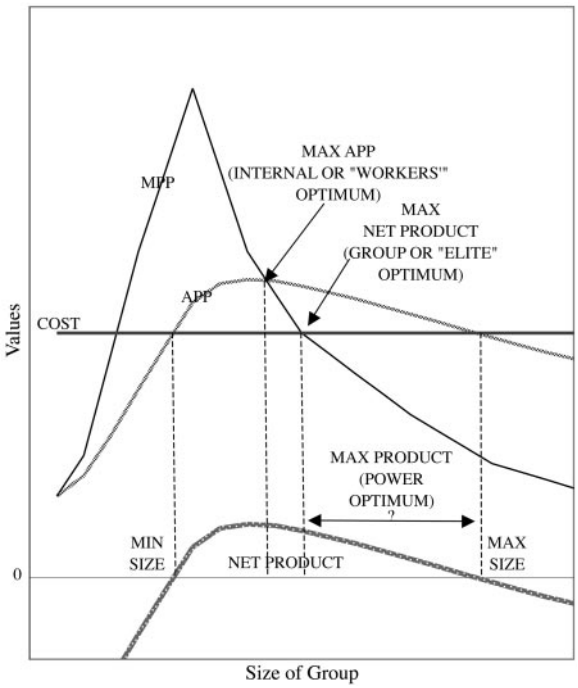


**Fig. 1.** Per capita value of allies in a kinship polity.

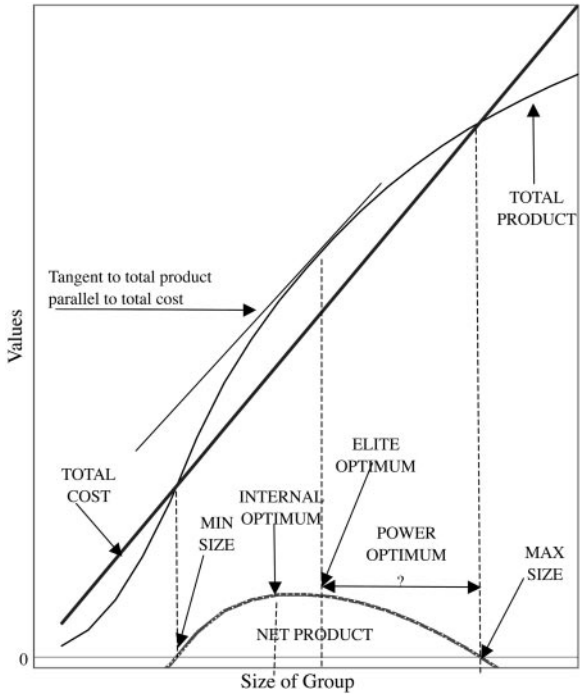


**Fig. 2.** Total value of allies in a primitive polity.

assistance when a supporter of Ego today becomes the organizer of his own foray at a later time. In a tribal tributary system, the flow of tithes to the chief may be reciprocated by feasting of the subordinates. Costs and benefits may be different goods, so that calculation of net benefits is difficult for lack of a common currency. In political life, the calculation of net benefits is always difficult. Notions of sufficiency and reciprocity are vague, even if powerful. In simple polities, the problem is easier; still, the comparison of an enemy scalp with a haunch of venison will remain cultural, intuitive, and problematic. Only in the simplest situations, in which political action is pure labor, can the costs be thought of as the direct disutility of effort. We will assume a moral currency.

These costs (analogous to the wage) are treated for simplicity as a linear function of the number of kin, although cost might change nonlinearly because of density effects.

I proceed now, generally following Sauvy, to propose that perspective-dependent optima of different sizes can be specified, based on some plausible schedule of MPP and a level of per capita costs. It does not seem useful to make the customary distinctions among land, labor, and capital. "Land" could be construed as the territory of constituents or supporters and "capital" as the store of past favors granted. However, in this simple exposition, the number of supporters is part of the model, territory is likely to be a function of the number of supporters, and support exchange constitutes cost. All seem mutable into labor. I therefore focus on political labor as such. Fig. 1 shows the results from a per capita viewpoint. The abscissa is the number of kin in a group. The ordinate is an arbitrary scale of value. MPP rises rapidly and then declines more slowly. Average political product (APP) necessarily rises more slowly than at the margin and continues to rise after MPP falls, until MPP intersects it. At that point, APP also begins to fall. Cost is subtracted from APP to give the net product. If this net is less than zero, the group cannot exist; thus, there is a lower size bound at the left and an upper one at the right. The optima must lie between these limits. One optimum is at the maximum of APP, where the average value of all allies is maximal. (In Sauvy's scheme, this point is the "workers' optimum.") The next optimum is the point at which MPP falls below cost. The marginal ally at this point is not worth his salt. The political leader, or the group of allies jointly, might prefer not to have him because he costs more than he is worth. This point is the leader's optimum (Sauvy's "elite optimum") or the optimum of the group as a unit. Beyond this optimum, marginal allies continue to make a contribution greater than zero up to some point. For part of that range, APP is greater than cost, and the net product is greater than zero. If the size of the group extends into this range, its political strength continues to grow, although at greater cost. In Sauvy's terms, the "power optimum" lies within this range. It is worth it if you want to pay for it, but the marginal net benefit is decreasing.

A comparable view from the group perspective rather than that of individuals shows total rather than per capita values (Fig. 2). Cost increases linearly (by assumption). The total product rises rapidly, then more slowly. The value of net product rises and then falls. The key to understanding is the total political product (TPP) and the net surplus. At the left, where total product is below total cost, the political group is not viable. There is a matching point at the right. In between, there is a point defined by the peak of total surplus: the leader's or group optimum, where the group gets the most return for its costs. Beyond this point, up to the maximum limit, political power does increase but at decreasing efficiency up to the maximum sustainable limit.

All of these factors are driven by the shape of MPP. Fig. 3 shows several plausible curves of MPP. Up to $N \approx 3$, $A > B > D > E > C$. $A$ and $B$ then begin to decline, with $B$ eventually dominating $A$. $D$ and $E$ dominate where $4 < N < 10$ and then fall again below $A$ and $B$. $C$ eventually dominates all. Curve $E$ is particularly relevant to our exploration because of the sharp drop just after the start of the decline. A discontinuity of this kind might be expectable if, in some kin group, moving from $N$ to $N + 1$ allies crossed a boundary of collaterality (for example, from brothers to cousins, for whom the moral imperative of support might be less). This complication is especially important in segmentary systems.

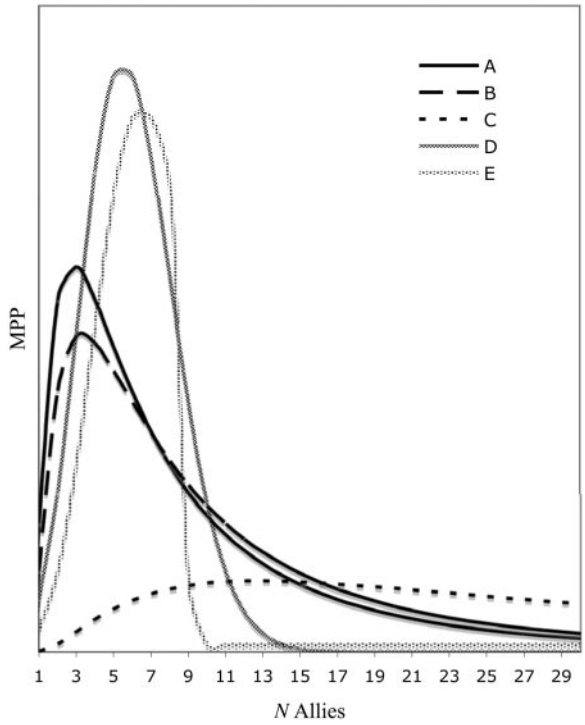


**Fig. 3.** MPP.

Now consider how these patterns might affect which of a set of competing groups might prevail. Fig. 4 shows curves of TPP based on Fig. 3.

The dominance order $A > B > C$ is undisturbed in TPP. At minimal size, $A > B > D > E > C$, but $D$ and $E$ rise rapidly to dominate all others after $N \approx 5$. $D$ continues to dominate all others, but $E$ flattens at $N \approx 8$ so that eventually $E < B < A < D$.

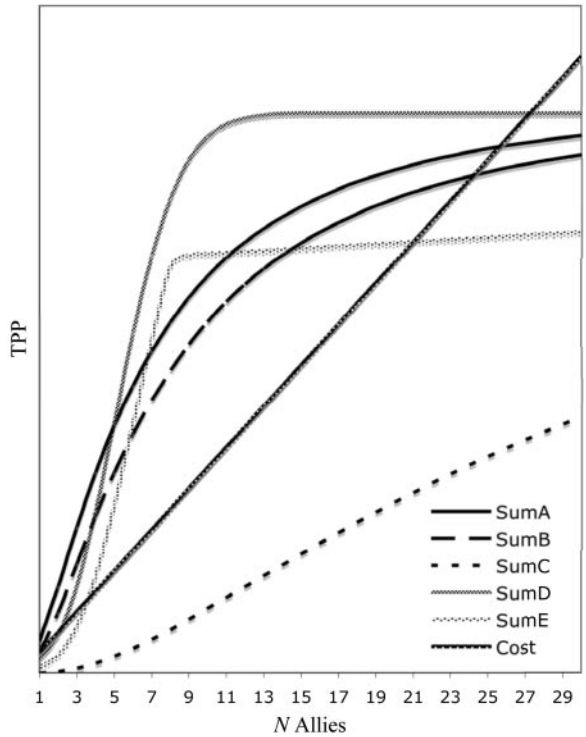


**Fig. 4.** TPP.

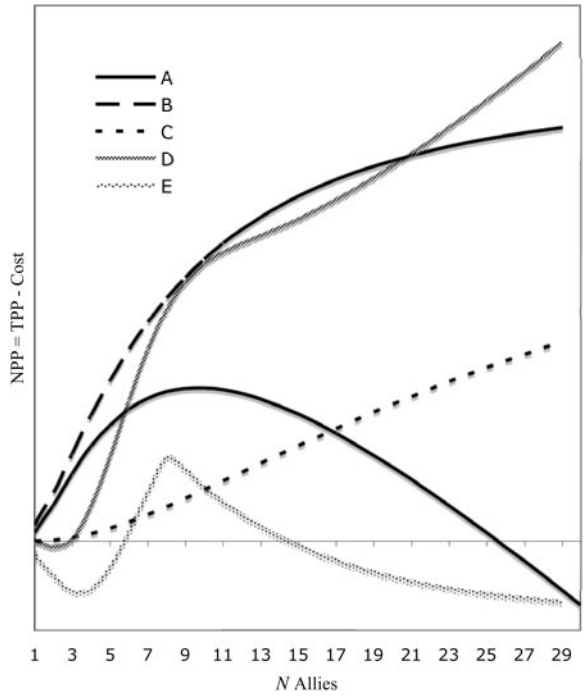


**Fig. 5.** Net political product.

Cost, however, rises with increasing $N$. Fig. 5 shows the relative dominance of groups by examining TPP minus cost, or the net political product (NPP). $D$ is not viable below $N \approx 3$, and $E$ is not viable below $N \approx 6$. $E$ is not viable above $N \approx 15$, and $A$ is not viable above $N \approx 26$. For most of the range, $B$ dominates all others, being overtaken by $D$ at $N \approx 21$, but the two are closely matched at $\approx 9 < N < 10$. Dominance would be a simple function of $N$ if all schedules of MPP were of the same shape and level. If only the shape of schedules were the same, dominance would be a function of the level of MPP and of $N$. Where the shape is different, it is also relevant. Similarly, the schedule of costs might not be identical for all groups. Only by looking at all factors, and thus NPP, can one appreciate the final dominance outcome. A further complication in such conjectures is that MPP itself may have different subjective values for different groups (just as the marginal product of labor was a subjective quantity for Chayanov). If the political situations of two groups differ (for example, if one is more vulnerable than another), the contribution of the $N$th ally to the more vulnerable group may have greater value to it than that of the $N$th ally to the less vulnerable. All of these factors make the political calculus more complicated, but the underlying reasoning is the same.

In general, we see that the ability of a group to dominate depends not only on its size but also on its underlying schedule of MPP and on its level of per capita cost or even marginal cost, should cost depend nonlinearly on the number of kin.

The number of kin fluctuates with demographic conditions. Marginal productivity will depend on social technology, not only on its inventory but also on the ability to select alternatives or innovate other mechanisms of control. It can also be expected to change nonlinearly (indeed, perhaps stepwise) as boundaries of kinship collaterality are crossed. As the number of kin increases, additional members may be of more distant collaterality, and their marginal productivity can be expected to be less not only because they are more distant and the moral imperative is weakened, but because they will have similar or closer alternative

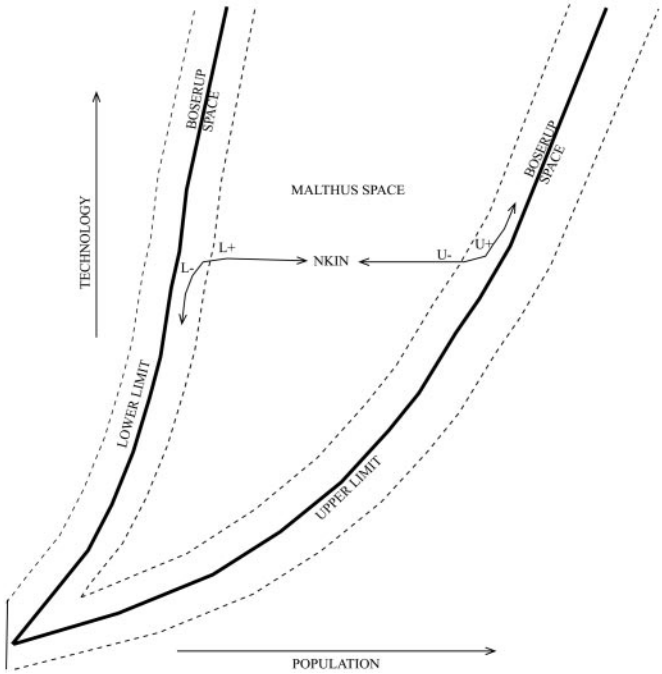


**Fig. 6.** Malthusian and Boserupian responses.

allegiances and other aims to pursue. The situation is of course made more complex in systems that permit intermarriage of consanguines, because then two persons may stand in more than one genealogical relationship to each other. Note also, however, that in a system that is not strictly segmentary (for example, one based on cognatic rather than agnatic relations), an individual ($I_1$) who is weakly related to Ego might be strongly related some other individual ($I_2$) who was in a powerful group that would be his own immediate allies. In that case, even though $I_1$ might have low marginal productivity for Ego as an individual, he might greatly increase MPP if he could serve as a link and recruit $I_2$. Thus, cognatic systems are in principle more flexible and less likely to fission but also impose greater burdens of choice on their actors.

As just suggested, kinship politics on the ground are thicker than these abstractions indicate. For example, an Ego taking action as an individual may approach his brothers one by one, and in an order determined by their marginal utility in the particular case. Perhaps one is a smoother talker and another a better shot. Perhaps one brother is more costly as an ally because his own political actions are likely to cost Ego a lot in the long run. Nothing is so dangerous as a close kinsman who is a fool. Even classic agnatic segmentary systems are not rigid, as noted by Fortes (7) in discussion of complementary filiation (by means of uterine links) and by Evans-Pritchard in discussion of the modifying influence of coresidence (8). The Bedu sticking by his brother may be mollified if his competing cousin is in the next tent (and especially if his sister is the cousin's wife). Seeking alliance with a powerful cousin in preference to a weak brother may generate costs of resentment from the latter.

Myriad factors such as these may complicate the issue, just as preferences and market failures complicate economic decisions and outcomes. Nevertheless, the effect of the moral imperative to aid kin and the efficacy of kin coalitions must depend in part on their size, their productivity, and the social technology of control.

## Political Macroeconomics

Looking at the issues more dynamically and on a larger scale, note that if kin groups change in size, they are driven toward an upper or lower Malthusian boundary, as shown in a diagram based on Lee (6) (Fig. 6). The "Malthus space," wherein Malthusian effects predominate and technological change is exogenous, is between the lines. The "Boserup spaces," wherein technological change is endogenous, are at the lines. Suppose that a kin group is driven close to the upper size boundary (rightward in Fig. 6). Its kinship mechanisms may be inadequate to manage political relations at that size, and it may fission into smaller groups. This outcome is a kind of "Malthusian" effect, beyond the usual alternatives of increased mortality or decreased fertility — just division and perhaps emigration out of a common ecological zone. For example, division of large groups may be driven by the need to open the marriage market in the presence of an exogamic rule. However, the group may move upward technologically in Boserup space by innovating or adapting its institutions and practices to accommodate its new size. For example, it could loosen an exogamic rule by restricting its scope, releasing the constraint in the marriage market. If the conveniently local population consists of unmarriageable consanguines, restricting the exogamic boundary to genealogically closer consanguines makes genealogically more distant but geographically still available ones marriageable. Conversely, if a kin group drifts toward the lower boundary (leftward in Fig. 6), it may find some social technology superfluous to its control needs and may abandon some kinship practices or distinctions between distant kin. For example, it could improve the probability of affinal alliances by expanding its exogamic rules, forcing wider searches for mates. If local populations are small, genealogically more distant consanguines are not geographically very far away. Fusion is another response to exogenous demographic change; groups too small to maintain a presence may merge, even readjusting their definitions of kinship relation (for example, by adoption, by marrying ghosts, or other kinship tricks that are well attested in the ethnographic literature).

The shifting inequality of distributions under various demographic shocks will drive some kin groups but not others toward these boundaries, where they may engage in institutional and behavioral change to accommodate. In some ways, the shifts in inequality dampen the shifts in mean levels of kin. Under a positive shock, the mean of kin increases, driving all groups toward the upper boundary on average. However, inequality is decreased under a positive shock so that the relative dispersion of kin groups is less. Nevertheless, those already large will still move upward. They have the power, they are under more pressure to innovate, and they may be able to make innovations in their interest endure. Conversely, if mean levels of kin decrease, inequality increases, so that some groups are driven relatively closer to the lower boundary. They may be thus accelerated into a low-level trap in which social and political relations become problematic. Their extinction may be social rather than physical.

## Real-World Examples

The ethnographic literature on the organization of tribal societies is largely devoted to the importance of kinship systems in the regulation of political and other social behavior. Classic examples are in the African literature in the works of Fortes (7, 9), Evans-Pritchard (8), Gluckman (10, 11), E. Goody (12), J. Goody (13–15), Radcliffe-Brown and Forde (16), and others. Leach (17) provides an example of cyclical political alternation and boundary shifting in Southeast Asia that fits the framework discussed here and could indeed have been driven by demographic fluctuations rather than being simply endogenous in the political system.

The politics of African, Near Eastern, and Central Asian segmentary societies may often be understood by the repeatedly cited Arab proverb, "Myself against my brother, my brother and I against my cousin, my cousin and I against the stranger."

In regions where blood feuding was important, as among Montenegrins and Albanians in the mountainous Balkans, re-

venge was a kinship obligation and was inversely correlated with collateral agnatic distance. Kin groups, starting at the household level, merged and fissioned in accordance with collaterality (18, 19). Before the Norman Conquest, Anglo-Saxon society was governed by similar norms of competition and feud, and obligations of retaliation or compensation were reckoned by collateral (although cognatic) degree. Similar norms prevailed in continental Germanic societies and their offshoots.

In medieval Europe, the church frequently sought to limit the ability of the nobility to consolidate their holdings through consanguineal intermarriage or marriage with ritual kin. Conversely, the nobility consciously used marriage alliance, fosterage, and ritual kinship arrangements to both expand and concentrate their control of resources (15, 20).

Ethnographic and historical work in Central Asia, the Caucasas, the Balkans, and the Near East shows how cousin-preferential marriage, ritual kinship, surrogate nursing, fosterage, or other symbolic devices were used to manipulate political alliances and oblige political fealty (19, 21–23).

## Do Formalisms Help?

Sociologists of the Simmel school and native politicians (thus, most of us) would appreciate intuitively that calculations of the net marginal productivity of an ally are the very stuff of political action. What, then, is the utility of the formalizations suggested above?

By hypothesizing the shape of the marginal productivity of political allies, we found (following Sauvy) that there were different optimal sizes of kinship groups even with a single scale of marginal productivity and cost and, further, that these optima were driven by the level and shape of marginal productivity. Although the level of productivity is driven largely by institutions of political control, the shape may be driven in complex ways by the genealogical and cultural structure of kinship, especially by the numbers of persons and expectations of support at collateral boundaries. It may also be complicated by cross-cutting ties: consanguineal, affinal, or residential, to which we might add ties of ethnicity, class, and other interests in more complex societies. Not all of these factors are intuitively obvious, although individual actors may go through decision processes that are commensurate with the principles noted.

Second, we proposed that shifts in mean levels of kin and the inequality of distribution of kin drive populations toward the upper or lower boundaries of Malthusian social space, not an economic space in the strict sense or even an ecological space. As these boundaries are approached, fission and fusion are obvious Malthusian responses, in addition to those of mortality and fertility change, which are commonly recognized. Drawing on Lee, we proposed that on entering the bordering Boserupian spaces where technological change is endogenous, political actors might select or develop institutional alternatives that favored their purposes. That process would allow expanding populations or kin groups to continue to grow without losing political control or would allow shrinking populations to exist with simpler social technology. This idea is an expansion of Boserup's recognition that some technology is social technology and that the implementation of that technology has important implications for control of resources, including allies.

Finally, we gave some brief references to the ethnographic and historical literature attesting to the inventiveness of political actors in using and developing institutional alternatives to maintain the scope and power of their kinship or quasi-kinship relationships. These examples are testimony not only to agency in tactical selection but also to innovativeness in constructing new alternatives.

## Implications and Conclusions

Is there an evolutionary story to tell? If so, it is complex. Each population has a history, both demographic and cultural. The demographic history is embedded in its structure of age, sex, and genealogy. The cultural history is embedded both in memory and in current practice. Some of the repertoire is active; some is latent. Each population also occupies a point in Fig. 6. The reaction to a shift in the growth rate $r$ can be illustrated by four contrasting populations in Table 1, where $U$ is a population at the upper boundary, and $L$ is a population at the lower boundary. Per capita resources and kinship inequality vary inversely with change in $r$. Social (and other) technology is inadequate or superfluous for populations moving toward the nearest boundary. Populations decreasing at the lower bound face extinction (or merger) and may discard some social technology. Populations increasing at the upper bound face resource insufficiency, may fission, or may innovate social technologies to increase political control even as population grows.

**Table 1. Four contrasting scenarios**

| Boundary | $\Delta r$ | Kin inequality | Resources | Social technology |
|---|---|---|---|---|
| $U$ | + | − | − | Inadequate |
| $U$ | − | + | + | Superfluous |
| $L$ | + | − | − | Inadequate |
| $L$ | − | + | + | Superfluous |

Some kinship institutions might be more advantageous to powerful actors than others. Powerful actors so advantaged might seek to maintain or expand those institutions. Societies with advantageous institutions might survive better than those without; thus, such institutions would endure and perhaps be elaborated. [See, for example, Sahlins (24).] Empirically, we observe that very large territories in Eurasia and Africa have been occupied by populations characterized by political structures based on agnatic kinship. All depend on control of large and dangerous animals that are usually domesticable only by males. Most also practice plow agriculture, which demands male participation. All of these societies have also expanded demographically, often spasmodically. One may speculate that technological changes that put economic power principally in the hands of males (controlling draft animals and handling plows) and residence patterns that were based on agnatic affiliation (bride joins groom, who stays close to his agnatic kin) relegated women to a subordinate economic position and intensified the role of males as public political actors. That intensification can only have been assisted by technological changes that put even more destructive power in male hands, such as the stirrup and the horn-backed bow. The expansion of the Han, the Mongol and other Central Asian hordes, the Semites, the Indo-Europeans, and to some extent the horticultural East African Bantu fit this pattern. Absent the control of dangerous animals and thus plow agriculture, a similar story can be told for the Andes and parts of Central America. Such speculation has a long history (see, for example, ref. 25). This article suggests that pulses of demographic expansion, increasing pressure on resources, and decreasing the inequality of the distribution of kin may have led to efforts to increase control over expanded kin sets. If control were expanded, it could have led to the innovation of structured, predatory, and expansive political systems. Each historical case, with its own institutional, cultural, and ecological circumstances, will have been unique, yet a commonality may be discernible. The challenge faced by power holders when population growth increases is to use or develop cultural mechanisms of control that hold together groups defined in the same way genealogically but that are now larger. The kinship map, genealogically defined, is more egalitarian than previously; enhanced control may require imposition of inegalitarian centralization (for example, in the definition of cadet lines or the use of ritual and symbol to elevate current power holders above their potential competitors). The corresponding challenge faced by power holders when population growth decreases is to take advantage of the intrinsic increase in

inequality but to expand genealogical scope to retain numerical superiority. In the first case, the task is to retain control over more kin of the same degrees; in the second, the task is to redefine the scope of the moral imperative to overcome the decline in numbers of kin at the currently recognized scope of solidarity. Note that polygyny exacerbates these issues (21). Polygynous agnatic units will increase faster than monogamous ones by monopolizing the marriage market. Unlike general increases in $r$ that increase kin group size but depress inequality, focused increases in $r$ increase inequality. Polygyny also sets up natural conflict and fission points between agnates with different uterine links, often through conflict between cowives. Struggles for dominance within the broader agnatic group are all but guaranteed.

In sum, this article calls attention to the role of demographic phenomena in changing the landscape for political actors. It suggests that such effects may be not only transient, because actors select from a known repertoire, but also cumulative. Power is a sticky good. New institutional alternatives that better serve political interests, as existing institutions are stressed by demographic change, may endure. Kinship systems, seen broadly to include quasi-genealogical and ritual ties, may thus evolve to become more resilient to exogenous demographic shocks and consequent changes in mean levels of kin and the inequalities of their distribution.

I am indebted to G. William Skinner, Ronald Lee, Rachel Sullivan, Bernardo Lanza Queiroz, Omer Gersten, and others in the University of California, Berkeley, Demography Seminar; to the Seminar in Anthropological Sciences at Stanford University (Stanford, CA); and to Elizabeth Colson, Henry Harpending, and J. R. Goody for comments on previous and related drafts of the manuscript.

1. Hammel, E. A. (2005) *Proc. Natl. Acad. Sci. USA* **102,** 2248–2253.
2. Chayanov, A. V. (1966) *A. V. Chayanov on the Theory of Peasant Economy* (Univ. of Wisconsin Press, Madison, WI).
3. Chayanov, A. V. (1989) *The Peasant Economy: Collected Works* (Ekonomika, Moscow).
4. Hammel, E. A. (2005) *Proc. Natl. Acad. Sci. USA* **102,** 7043–7046.
5. Sauvy, A. (1969) *General Theory of Population* (Weidenfeld & Nicolson, London).
6. Lee, R. D. (1986) in *The State of Population Theory: Forward from Malthus*, eds. Coleman, D. & Schofield, R. (Blackwell, Oxford), pp. 96–130.
7. Fortes, M. (1967) *The Web of Kinship Among the Tallensi* (Oxford Univ. Press, London).
8. Evans-Pritchard, E. E. (1956) *The Nuer* (Clarendon, Oxford).
9. Fortes, M. (1967) *The Dynamics of Clanship Among the Tallensi* (Oxford Univ. Press, London).
10. Gluckman, M. (1955) *Custom and Conflict in Africa* (Blackwell, Oxford).
11. Gluckman, M. (1965) *Politics, Law, and Ritual in Tribal Society* (Free Press, Chicago).
12. Goody, E. N. (1982) *Parenthood and Social Reproduction* (Cambridge Univ. Press, Cambridge, U.K.).
13. Goody, J. (1973) *Comp. Stud. Soc. Hist.* **15,** 3–20.
14. Goody, J. R. (1976) *Production and Reproduction* (Cambridge Univ. Press, Cambridge, U.K.).
15. Goody, J. R. (1983) *The Development of the Family and Marriage in Europe* (Cambridge Univ. Press, Cambridge, U.K.).
16. Radcliffe-Brown, A. R. & Forde, C. D. (1950) *African Systems of Kinship and Marriage* (Oxford Univ. Press, London).
17. Leach, E. (1954) *Political Systems of Highland Burma: A Study of Kachin Social Structure* (Harvard Univ. Press, Cambridge, MA).
18. Boehm, C. (1984) *Blood Revenge: The Anthropology of Feuding in Montenegro and Other Tribal Societies* (Univ. Press of Kansas, Lawrence, KS).
19. Hammel, E. A. (1968) *Alternative Social Structures and Ritual Relations in the Balkans* (Prentice–Hall, Englewood Cliffs, NJ).
20. Mintz, S. W. & Wolf, E. R. (1950) *Southwest. J. Anthropol.* **6,** 341–368.
21. Parkes, P. (2001) *Comp. Stud. Soc. Hist.* **43,** 4–36.
22. Parkes, P. (2003) *Comp. Stud. Soc. Hist.* **45,** 741–782.
23. Parkes, P. (2004) *Comp. Stud. Soc. Hist.* **46,** 587–615.
24. Sahlins, M. (1961) *Am. Anthropol.* **63,** 322–345.
25. Murdock, G. P. (1949) *Social Structure* (Macmillan, New York).