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Bargaining, Altruism, and Demographic Phenomena

Oded Stark

In this paper we propose to dress demographic phenomena in the fairly new coat of strategic behavior. Although frequent changes of entire outfits are highly fashionable these days, the underlying motivation for the approach offered here is that it facilitates complementary and, at times, deeper insights into how we account for diverse demographic phenomena. Because explanations and predictions emanating from this approach, especially with respect to allocation and distribution, differ at times by sign rather than degree from those generated through other more conventional approaches, the usefulness of the set of examples presented below can, at least in principle, be tested fairly easily.¹

One of the most interesting aspects of this approach is that although many demographic phenomena are determined, organized, and realized within families and are not ceded onto the marketplace, a special role is assigned to markets in shaping the environment in which decisions entailing at least some of these phenomena are made.

In general, the identity of the agents who are directly responsible for generating a given demographic phenomenon does not coincide with the identity of the agents who are in a position to meaningfully influence it. In accounting for a given demographic behavior, it thus becomes necessary, first, to identify the latter agents, and second, to capture the governing procedures and mechanisms—namely, how the relevant agents interact. The main ideas underlying this paper are that an appropriate subset of such agents exists—family members—and that many of the interactions taking place can usefully be modeled through bargaining and altruism. It should be pointed out, from the start, that the two can and do coexist: “to love” and “to argue,” “to care” and “to negotiate,” affection and discord, are not mutually exclusive. (Those familiar with game theory may recall one of the earliest examples, “The Battle of the

Sexes,” which describes the payoff to a husband and wife, each wanting to go to a different movie together. “Together” captures “love” whereas “different” lays the foundations for bargaining.) The introduction of bargaining has powerful implications since it introduces strategic behavior and interdependence of decisions. A third underlying idea is that, like economic behavior, demographic behavior is ordinarily subject to (constrained) conscious choice.

In what follows we direct our attention to intrafamilial exchange, viewing family members as altruistic bargainers who negotiate with each other, and in so doing are motivated by the assumption that (at least for a while) a joint action dominates a unilateral action. A necessary condition for voluntarily engaging in negotiations is for all parties to believe that as a result they can end up better off. A sufficient condition for voluntarily engaging in negotiations is that the expected benefit is greater than the anticipated costs of negotiation (where benefit is calculated by allowing for all possible outcomes and their probabilities). Since *within* the family these costs are usually low, even small expected benefits warrant negotiation. Altruism—ordinarily a highly family-specific asset—plays a dual role in this context. First, it brings the parties closer together, thereby rendering it easier to reach an agreement. And it makes the bargaining process more congenial. (Bargaining *as such* can be very unpleasant, hence costly. Altruism tends to render the negotiating process less uncomfortable.) Second, it reinforces the cooperative nature of the bargaining game. An agreement preceded by and reached through bargaining is reinforced by altruism. This can be demonstrated quite easily. The underlying conditions for cooperation are coordination, exchange of commitments, and the like. These hinge upon the mutual trustworthiness of the parties: in climbing a cliff, clinging to a rope you hand me, I assume you are holding it tightly. Knowing you are altruistic toward me reinforces my confidence in the firmness of your grip. In economic terms, if *A* attaches a positive weight to the well-being of *B*, that is, if *B*'s utility enters positively into *A*'s utility function, *A* is said to be altruistic toward *B*.

If cooperation is the output, bargaining is an input. Bargaining refers to a process whereby rational agents communicate with each other, make promises, transmit threats—in short, negotiate in order to advance their interests. Note that the bargaining need not be explicit.

We may now pull together these strands to suggest that a great many demographic phenomena cannot be fully understood or accounted for without considering intrafamilial bargaining and altruism. This can most easily be seen by looking at some of the interactions between distinct demographic phenomena woven together through bargaining processes and altruism. Given such a perspective, it is easier to see the sense in which demographic behavior becomes strategic behavior: in judging whether the *level* of a given variable is optimal, it is mandatory to consider the impact of alternative levels upon the bargaining power assumed thereby with respect to (the determination of the levels of) *other* variables. And, as we shall repeatedly see below, failing to account for strategic behavior in the demographic sphere could result in incomplete and perhaps incorrect conclusions about resource allocation in other spheres.

Fertility, the asset demand for children, and bequests

The decisions of how many children to have and how much to bequeath to them (and in what form—human or physical capital) are interwoven. Both impinge on the level of well-being of the parents. This holds true not only when children's well-being is assumed to enter as an argument in the parents' utility function, but also if children are considered purely as capital goods—a device for transferring resources from present to future consumption. But note that when that future time arrives and children are called upon to support parental consumption, they are in a position to exercise independent discretion with respect to such provisions. Property rights over children cannot then be claimed; they are different from savings accounts. Being aware of this, parents conduct their affairs so as to ensure that the discretionary behavior of their children will be as compatible as possible with their own preferences. Therefore, parents have to behave strategically when deciding how many children to have, how to make bequests to them conditional upon behavior, how to invest in them so as to manipulate their future conduct. For example, with respect to provision of a child-specific service that the parents greatly desire, one child is in a natural monopoly position, whereas two or more children need to form a stable coalition to secure a similar position. Because the presence of another child reduces the bargaining power of a given child with respect to the terms of delivery of a service, parents have an incentive to bear more than one child. Because an extra child is required to fulfill this diluting role *as an adult*, high infant and child mortality regimes, when prevalent, call for having and raising a number of children. In this context, children are thus needed to fulfill two distinct roles: to directly furnish their parents with desired services and, by eroding one another's bargaining positions, to ensure that such services are supplied at an "affordable" cost. Put somewhat differently, the presence of children is required to raise the mean well-being of their parents and to reduce the mean spread, provided the parents are risk averse.²

Most studies of the old-age security motive for bearing and rearing children surprisingly assume that children will automatically confer the anticipated benefits.³ Yet once this assumption is swept out, quite divergent prescriptions and predictions follow. With automatic transfers, parents find it advantageous to engage in all sorts of transactions that are expected to enhance the capacity of their children to confer the benefits, the willingness of the children to do so being taken as given. With discretionary transfers, parents find it advantageous to engage in acts to enhance the will of their children to confer benefits, that is, in acts enhancing their bargaining power vis-à-vis their children. And if the will to deliver old-age support is negatively correlated with the capacity to do so, parental investment in furthering such a capacity will be constrained. Thus, for example, bequests in old age, and even before, under the first scenario can be expected to be high; under the latter scenario, low.⁴ The composition of parental investment will also be affected. With

automatic transfers, investment in children's human capital will be higher and in physical capital lower than with discretionary transfers. Although in both cases parental human capital expenditures on children enhance the capacity of children to make transfers, in the latter case, by strengthening children's bargaining power, such investment could further weaken their willingness to furnish the parents with old-age support, or it could increase the parental cost—in terms of concessions and so on—associated with ensuring (or extracting) a given form or level of support. (When transfers are discretionary, the net marginal yield to investment in children's education is lower than when transfers are automatic, hence less education will be undertaken.) When children are not the sole means of transferring consumption from the present to the future, that is, if some alternative means for a transfer such as a well-functioning capital market exists, parents will tend to rely more on returns from other investments and less on transfers from their own children. Clearly, this would also affect the asset demand for children and the very decision to have them.⁵

It is important to spell out the likely inefficiency implications of discretionary transfers. Assuming that there are diminishing returns to parents' investment in their children's human capital (as is usually the case for education) and that parents can invest in physical assets as an alternative, then, with automatic transfers, the optimal allocation of investment will be determined by equalization of the expected rate of return across investments equalized, in turn, to the market rate of interest. With discretionary transfers, investment in human capital is subject to a larger spread as better endowed children transform enhanced market power into a stronger bargaining position. Risk-averse parents will thus switch from investment in, say, schooling of their children to investment in assets before the diminishing returns to schooling hit the market rate of interest.

Does this story—portraying parents and children as adversaries and the family as a battleground—square with the prevalence of intrafamilial altruism? Reiterating our opening comments, the answer is yes; parents turn to their children partly because once the bargaining is through and an implicit contractual arrangement is agreed upon, family-specific altruism reduces costs associated with enforcement. We shall return to this point below in examples of marital dissolution and migration and remittances.⁶

Marital dissolution

It can be argued that a spouse's incentive to dissolve a marriage is causally related to the bargaining outcome of the dissolution process.

When individuals voluntarily enter marriage, they do so because each expects the value of marriage to be higher than the value of staying single.⁷ This leaves scope for negotiation concerning the distribution of the marriage product and hence for bargaining over individual compensation in a somewhat similar fashion to that which takes place between a firm and its employees. Although *ex ante* the condition stated in the first sentence of this paragraph

must hold, *ex post*, in a world of imperfect and costly information, uncertainty, changing opportunities, and adaptive behavior, it need not. If after entry into marriage at least one party finds that his/her value outside the current marriage plus his/her share of the marital property is higher than the value to him or to her in the existing marriage, a divorce will be contemplated. In certain instances, both spouses may assume such to be the case, with a number of possible divisions of the “marriage capital”—the value of the joint activity engaged in by the spouses. There is then scope for bargaining over the terms of the divorce. The above comment concerning uncertainties also explains the absence of a complete *ex ante* assignment of property rights to marriage capital. The very decision to marry cannot be divorced from the prospect of divorce. For example, if the expected value of marriage is higher than the value of staying single but the probability of divorce is conceived to be high, risk-averse individuals will tend to enter marriage less than when the probability of divorce is conceived to be low.

In accounting for the recent experience of a number of Western societies—for example, the secular growth in divorce in the United States over the last three decades or so—the moral hazard argument holds that the ease of exit from marriage induces less careful entry, which is bound to result in more exits. By contrast, our argument is that the capacity to negotiate the terms of exit from a position of strength results in more exits as alternatives to remaining locked in discontent.

Those who enter marriage do not ordinarily do so in order to end up divorced (though some presumably do, this constituting a rent-seeking strategic behavior). Yet it is unreasonable to assume that rational individuals are blind to the social milieu within which they make their choices, conduct their transactions, and pursue their interests. It is thus assumed that at some (private) cost, marriage can be broken.

Consider, then, a person who attaches a high enough probability to marital dissolution to warrant engaging in postmarriage planning of a possible divorce. Because the terms of the divorce, or the division of the value of the marriage, are, in part, privately determined and depend upon the spouses’ relative bargaining powers, the person may engage in predivorce activities that are expected to enhance that power and to avoid activities expected to weaken it. Such behavior may bear a positive, separate, and direct effect upon the probability of divorce, but need not; a woman who invests in preening herself does not necessarily do so at the expense of leaving her home untidy. Nor does such behavior necessarily lead to nonaccumulation of marriage capital. As long as the other spouse does not interpret such behavior for what it is, the person who contemplates a divorce need not be concerned about this duality. Since even within marriage some information is asymmetric, the alleged planning may not be detected.⁸ As in this example, the general form taken by the activities related to the strengthening of bargaining power is to shift away from marriage-specific investments (and from investments specific to the current marriage) onto market ones (and onto investments that, although marriage-

specific, are not specific to the current marriage). Under this interpretation, having and raising children may weaken the wife's relative bargaining position. To the extent that divorce necessitates the wife's entry or reentry into the labor market, such highly marriage-specific activities as childbearing and rearing are costlier—directly in depreciating marketable human capital and indirectly in eroding bargaining strength due to a lower capacity to assume the risks associated with confrontation, nonaccess to joint marital property, and so on.⁹

One implication of this approach is that increased female participation in the labor force and fertility decline are linked through an intermediate variable. Expanded market opportunities for women alter the intramarriage power relations in their favor. Given the prospect of a divorce, bearing and rearing children tend to erode women's bargaining power and, therefore, fertility is reduced.¹⁰ Note that if a divorce law were to apportion marital capital on the basis of measurable economic sacrifice (the full cost of marriage-specific investment) rather than on the basis of realized bargaining strength, this incentive to limit fertility would be wiped out. Another implication is a tendency to overinvest in marketable capital and underinvest in marriage-specific capital. For example, a married woman will tend to engage in acquisition of marketable skills rather than in home production not only because of an "income effect," but also because of a "signal effect"—since this would transmit to her spouse a stronger bargaining position and thereby support a better divorce deal. Overinvestment in marketable human capital parallels here the overproduction of children to which we referred in the previous section. Strategic behavior may entail inefficient allocations.

In addition, to the extent that the divorce process entails transaction costs, possession of a stronger bargaining position by one party facilitates shift of such costs onto the other party. Also, given the prospect of a divorce, it is possible that the party whose bargaining power is greater will be able to enforce a distribution of marital consumption more favorable to him- or herself in exchange for an alimony to be offered to, and be highly valued by, the other party following dissolution of the marriage.

Holding constant the duration of marriage, one reason why a young woman is more likely to incur a divorce than an older woman is that because her total accumulated human capital is smaller, a compositional change from largely marriage-specific to largely general traits is easier. A woman whose human capital is in large part not marriage-specific will be less averse to a divorce and, therefore, will be in a stronger bargaining position to negotiate for more favorable terms. (In each case her spouse is assumed to possess, correspondingly, a smaller and a larger amount of general capital.)

Furthermore, it is possible to infer that for a woman who happens to be in an environment in which the divorce rate is high, the probability of divorce will be higher than for a woman who is in an environment in which the divorce rate is low. If an exogenous high rate of divorce conveys the information of a significant probability of divorce, which in turn leads to investment in ac-

quisition of bargaining power so as to facilitate a superior divorce agreement, then, since the gains associated with a divorce are higher (or the costs are lower), its likelihood will increase.

Altruism assumes a particularly interesting role here. Marriage can be conceived as a self-enforcing contractual arrangement reinforced by altruism; it can be shown that *A*'s altruism toward *B* serves as an extra enforcement mechanism in that it produces a stricter condition for violation by *A* of the marital contractual arrangement. In a similar vein, the waning of altruism eases the condition for violation—and increases the likelihood of divorce. In situations where altruism turns to hatred, this can bring about the collapse of the contractual arrangement and sustain divorce bargaining even for any positive expected gain to *A* from nonadherence to the marital agreement.¹¹

Family nucleation

For reasons amply reported in the sociological, demographic, and economic literature, nuclear families are considered less disposed to high fertility than extended families. However, the literature is more informative on the consequences of the nucleation process than on the reasons for it. We outline below a possible bargaining explanation.

We assume that the fundamental feature of the extended family is the institution of equal sharing of income and consumption, and we employ this feature to define an extended family. In this sense, an extended family no longer exists if such a sharing arrangement ceases—whether or not independent households are formed. We additionally assume a distribution function of individual members' productivities. Thus members receive the average product of the group, while contributing marginal products that are different and given by the assumed distribution function. Hence shares are not conditioned on individual productivity. Suppose now that the more productive members are aware of their higher "quality" or "skill"—which we assume to be general (i.e., equally valuable elsewhere)—and that this perception is shared by the other family members. Any potential demand by the "highly skilled" members for an increased share would have to be supported by bargaining power.

Outside market opportunities could play a critical role; but presumably in an economy that is not too well developed, product differentiation and labor differentiation are limited, and the demand for heterogeneous labor is slack. There is no market rationale for awarding higher wages to the more skilled. Also, there is limited marketplace capacity to discern true skill levels. The bargaining power of the "higher quality" members is thus also constrained by informational asymmetry. Furthermore, setup costs of, say, an independent farm operation are likely to be high, and financial markets insufficiently developed to facilitate such a venture. Threats to depart from the extended family are thus not too credible; hence a demand to skew the intrafamilial distribution is unlikely to be taken seriously.

To the extent that, other things being equal, a person with a transferable skill S prefers association with an extended family to nucleation, he will be indifferent between the family average "wage" $\bar{W}_F(S)$ and the market wage $W_M(S)_1$ even if the latter is somewhat larger than the former. That is to say, as he applies some discount factor to the market wage, the comparison in which he engages is between $\bar{W}_F(S)$ and $kW_M(S)_1$ where $k < 1$ so that his indifference condition is $\bar{W}_F(S) = kW_M(S)_1$. If $kW_M(S)_1 < \bar{W}_F(S)$ for all S , no one can credibly threaten to break up the extended family.

Allow now for labor market differentiation to be captured by a steeper market wage curve $W_M(S)_2$ so that (even for a given wage bill) the more skilled are awarded higher wages than before and the less skilled lower wages. With a sufficient pivoting of the market wage curve, for some of the more skilled the discounted labor market wage is now higher than the family average wage, although still falling below their individual productivity in the family production enterprise. This is precisely what opens up a bargaining space. A "highly skilled" member will be better off with the discounted market wage, now given by $kW_M(S)_2$, than with the family average "wage," yet still worse off than with his individual family "wage." A family member whose skill level is above the level given by the cutting point of the new market wage curve with $\bar{W}_F(S)$ enjoys an increase in his absolute bargaining power and also in his relative bargaining position vis-à-vis members whose skill level is below the level given by this cutting point. His request for dissociation from the averaging group effect would have to be met directly or through the marketplace. Define S upon the closed interval $[0, 1]$ and take, for example, the most skilled member whose $S = 1$. Since for him $kW_M(1)_2 < W_F(1)$, the rest of the family members will be better off by conceding to a demand to grant $kW_M(1)_2$ and still enjoy for sharing among them $W_F(1) - kW_M(1)_2$, whereas the highly skilled member will be indifferent between receipt of an amount equal to $kW_M(1)_2$ through the family if it concedes to his demand and receipt of the same through the marketplace if it does not. Note that the skilled member will not be able to extract *more* than $kW_M(1)_2$ because, given his preferences, a demand for such a compensation cannot be backed by a credible threat.

We can now bring in altruism. If altruism toward family members does not obtain, whether a family formally splits or not will be determined by chance. But be that as it may, by definition, the extended family will have collapsed since equal sharing will have ceased. (This holds, of course, even if due to altruism the highly skilled member, by rejecting entry into the marketplace, furnishes each of his fellow family members with additional income $[W_F(1) - kW_M(1)_2]/(n-1)$ where n is the total number of family members.)¹²

The poorly skilled members can be regarded as deriving rent from living in an extended family, but their capacity to extract this rent is inversely related to the marketplace opportunities available to, hence the bargaining power conferred upon, the highly skilled members. A change in bargaining strength of the latter originating in the market sector leads to an institutional change in the family sector.

Migration and remittances

The relationship between the modal rural-to-urban migrating unit in the developing world—a young, single family member, and the rest of his family—can be modeled as a cooperative contractual arrangement. The reason why the migrant and the family enter into a voluntary contractual arrangement with each other is that they expect to be better off with the contractual arrangement than without it. Furthermore, the migrant expects to be better off by covering a given set of transactions or contingencies through an agreement with his family rather than with a third party. The family has similar expectations.

Remittances and indeed the act of migration itself are elements in such a contractual arrangement. Thus, a migrant remits because he has entered into a contractual arrangement with his family to do so. He adheres to the contractual arrangement as long as it is self-enforcing, which implies that the migrant is better off doing so. The migrant stops remitting in spite of his undertaking to do so when the contractual arrangement is no longer self-enforcing or if the contractual arrangement itself provides for the cessation of transfers at a given time. Since the contractual arrangement covers a series of exchanges over time, and since bounded rationality and incomplete (and costly) information mean that not all contingencies can be contractually accounted for, the migrant or the family may find it worthwhile to breach the arrangement after some time. In principle, two mechanisms can deter violation: (a) an institution other than the two parties to the agreement—for example, the legal power of the state; (b) a calculation that the loss entailed in such a breach—for example, due to reprisal—outweighs the benefits. We shall consider only the second mechanism.

A migrant enters into a contractual arrangement with his family that *intertemporally* binds him to deliver goods and/or services because he expects intertemporal gains from such an arrangement. (A symmetrical argument applies to the family.) Important gains include family insurance to hedge against the erratic, even turbulent, urban labor markets; family monopoly power over the migrant's reputation in his home village; family control over the rural property. That the family continues to be a source of economic security, emotional satisfaction, and tangible assets to the migrant long after his departure for the city is reason enough for the migrant, in principle at least, to be willing to commit himself to remittances.

Let us now identify the conditions under which the migrant will find it advantageous to adhere to his commitments, to fulfill the remittances provision of the contractual arrangement. The argument that the family will find adherence a rewarding strategy is symmetrical.

Let there be some probability density function of a contractual arrangement being of a given duration for all possible durations. Let there also be a (postdiscounting) utility accruing to the migrant from adhering to the contractual arrangement in time t , that is, from being involved in a transaction with his family. We can thus calculate the expected gain from pursuing the agreement from t onward.

For a contractual agreement to be violated by the migrant at time t , two (necessary) conditions must hold: (a) that the agreement is still in force; (b) that violation will bring about some positive benefit. The expected gain from violation at time t is therefore the product of this positive benefit and the probability that the contractual agreement is still in force. This has to be compared with the expected loss—the forgone expected gain from pursuing the contractual arrangement from t onward—assuming that violation by the migrant leads to termination of the contractual arrangement by the family (here taken to be the “maximal punishment” strategy). The contractual arrangement will therefore be violated by the migrant if and only if the expected gain from violation is greater than the expected loss and will be self-enforcing otherwise.

When the migrant violates the contractual arrangement at time t , then, since according to (a), the contractual arrangement is still in force, the migrant inflicts a loss on the family. To see why, note that had the family expected a net gain from violation, it would have chosen to breach the contractual arrangement. Since the family chose to abide by it, its expected gain from pursuing the contractual arrangement at time t was *larger* than its expected benefit from terminating at that time.

It is reasonable to assume that the migrant cares about the well-being of his family, and it is convenient to capture the presence of such an altruistic attribute through a function $V(t)$; the migrant attaches a weight $V(t) > 0$ to the utility received by the family at time t . Now, the migrant will violate the agreement at time t if and only if his expected gain from violation of the agreement is greater than the sum of *two* terms: (1) his expected gain from pursuing the agreement from t onward; and (2) the family’s expected gain from pursuing the agreement at time t less its expected benefit from terminating it at that time whereby (2) is weighted by $V(t)$. Because this second term is positive, we obtain the result that *altruism reinforces a self-enforcing contractual arrangement*.¹³

This is a convenient point for a moment’s reflection. When the nature of the transactions the parties wish to enter into involves intertemporal transfers and intertemporal contracts, the parties will be duly concerned about the issue of enforcement. This concern should lead to preference for a partner with whom a contract will be (more) self-enforceable. Both migrant and family are endowed with a high *specific* asset: mutual altruism. The value of this asset is realized when they trade with each other, but would be lost if they were to enter into an exchange relationship with a third party. Because it enforces a self-enforcing contractual arrangement, altruism reduces the need for costly contractual safeguards. Other things being equal, it thus renders a migrant–family contractual arrangement more cost-efficient than alternative contractual arrangements. By enhancing “common interest,” altruism reduces the incentive of the trading parties to “go their own way.”¹⁴ In creating an effect similar to “trust” or “loyalty,” altruism assists the parties in solving problems that emerge when legally enforced property rights and contingent contracts cannot be written.¹⁵

But since both migrant and family gain more from a contractual arrangement with each other than from one with a third party, they should be willing to give more to each other than to a third party. Hence the migrant furnishes his family with more remittances, the family furnishes the migrant with more insurance, and so on.

In principle, several contractual arrangements could be Pareto-optimal, that is to say, such that none of the parties is worse off—and at least one of them is better off—with the contractual arrangement than without it. How then do the migrant and the family agree on one? Assume that the two-dimensional space of all possible contractual arrangements is compact (i.e., it is bounded and closed). The two axes measure the parties' utilities. The point in this plane representing the parties' failure to strike a contractual arrangement is a (fixed) "conflict point." Through the use of classical economic theory we can rule out contractual arrangements represented by points that do not lie to the northeast of this conflict point, and also contractual arrangements that are not represented by points lying on the boundary of the enclosed area (which is assumed to be convex) northeast of the conflict point. But this still leaves the parties with many efficient (Pareto-optimal) points to choose from in the subset of the plane. Standard economic theory does not enable us to invoke a choice in this instance; bargaining equilibrium analysis does. In the choice between the many feasible equilibrium points, the migrant and the family use their bargaining power in pursuit of self-interest. There is no contradiction between this and our mutual altruism assumption. Each party prefers the contractual arrangement that best suits its interests, which include anything, both selfish and altruistic, to which its utility function assigns positive utility.

The bargaining power of each party depends on the utility it can provide the other party, on the cost it will incur in providing this utility, and on its willingness to risk a "conflict"—the parties' departing without striking a contractual arrangement with each other. Since it is outside the scope of this paper to fully structure a bargaining game or to explore specific division schemes and bargaining solution concepts, let us merely assume that a point is chosen from the bargaining set that is "closer" to the most preferred point of the party whose bargaining power is stronger than it is to the most preferred point of the other party.

It is now easily seen how our approach furnishes specific predictions about remittances. Since the outcome—the contractual arrangement the parties strike—reflects their relative bargaining power, variables enhancing the bargaining power of the family or weakening that of the migrant will positively influence the magnitude of migrant-to-family remittances, whereas variables enhancing the bargaining power of the migrant or weakening that of the family will negatively influence their magnitude. Highly valued family property, un-tight or unstable urban labor markets, and close social cohesion illustrate the former. Tight rural insurance (financial) markets, high dependence of a new agricultural technology the family may wish to adopt on specific and indivisible investments, and high subjective and objective risks associated with such a

technology illustrate the latter. Thus, the distinct testable prediction of the approach outlined here is that it is the family's strength (its power to request), not its weakness (needs and demands), that *positively* influences the magnitude of migrant-to-family remittances.

Conclusion

In this paper we have made the following points. First, given that the decisions that determine demographic phenomena are made within the family, the intrafamilial interaction that produces these decisions is a strategic phenomenon and can be fruitfully analyzed within a bargaining-cum-altruism framework. Second, these decisions can be analyzed with models in which agents make constrained, conscious, and rational choices. Third, markets play a special role in shaping the environment in which these decisions are made. We have applied these ideas in the study of four demographic phenomena: fertility; marital dissolution; family nucleation; migration and remittances. Our paper suggests that to properly explain, hypothesize on, and predict demographic phenomena, some explicit accounting for bargaining and altruism is appropriate. We do not wish, in any way, to overstate our case. But next time you find yourself saying, "If you do not love me I'll die," how about considering the alternative formulation: "Altruism—or mortality." One hopes, the reply would not be: "To be honest with you, I was looking for a better bargain!"

Notes

This paper expands upon introductory comments delivered at the "Bargaining, Altruism, and Demographic Phenomena" session of the 1984 Annual Meeting of the Population Association of America, Minneapolis, Minnesota (May). I have benefited from exchanges with B. Douglas Bernheim, Paul David, Elizabeth Peters, and Robert A. Pollak.

1 One such test, pertaining to the migration and remittances example, is provided in Lucas and Stark (1984).

2 Applying the first-order condition for maximization, the equilibrium number of children is raised since the schedule reflecting the gains associated with having incremental children pivots upward whereas the cost schedule remains intact.

3 Even sophisticated models such as those of Neher (1971), Willis (1980), and Nerlove, Razin, and Sadka (1984) adopt such a perspective.

4 Societies differ in the degree of parental control, norms, etc., that govern the support with which children furnish their parents, and also in the extent to which commitments to provide such support are reinforced by social sanctions. This could account for the variance characterizing the pattern and timing of bequests of physical capital.

5 It should be emphasized that the approach and implications outlined above crucially depend upon the assumption that parental support emanates from a cool, rational, calculative choice. No inherent will to furnish such support exists. Yet if some such will did exist, a small rather than a large number of children might prove optimal! To see why, note that, given such a will, a child may still prefer another one to deliver the service or more of it—himself not at all, or less of it. If all children behave in a symmetrical way, the service may not be delivered at all. Since such an inducement to shirk (free-ride) is pos-

itively related to the number of children, parents can guard against this by limiting rather than increasing the number of their offspring.

6 At least in some cases it is possible to estimate the shadow price of this implicit asset, e.g., when parents “lease” land to their children—in exchange for consumption support—at a “cost” below the going market rental rate. This difference approximates the shadow price of altruism.

7 Side payments are allowed; that is, corrective transfers *between* the spouses, out of the transferrable added value, leading to actual realization of such expectations in case the initial distribution did not, are permitted. See Becker (1974).

8 If the spouse does realize what the partner is up to, a bargaining over the acquisition of bargaining power—a game within a “super game”—would develop.

9 These effects are assumed to be much stronger than an effect possibly operating in the reverse direction, viz., the companionship of children and the comfort offered by them, which, in the event of marriage dissolution, could become especially valuable. Furthermore, children particularly erode bargaining strength when they are young, which is precisely when their capacity to dispense such a service is limited.

10 However, this might not apply over the entire range; perhaps bearing no children at all may sharply curtail bargaining power and likewise bearing and rearing more than, say, one or two.

11 It is an intriguing thought that the approach outlined in this section could perhaps contribute to an explanation of patterns, such as the one observed in the United Kingdom, that over the past five decades or so participation in paid work by married women has risen significantly more than that of nonmarried women (Gershuny, 1983).

12 The above analysis somewhat parallels that of David and Sundstrom (1984), who exploit the Aumann-Maschler (1964) kernel solution concept in the context of a parents-children bargaining game. Since the kernel solution mandates “matching sacrifices of selfish interests” by all players, the strength of claims to family wealth increases with the value of outside opportunities because not responding to these opportunities and staying on the family farm, furnishing the parents with support, etc., amounts to a greater sacrifice.

13 What renders even more appealing the introduction of altruism and reciprocal altruism is the repetitive nature of the migrant-family relationship (while, at the same time, allowing a multitude of degrees of altruism across families and across cultures). On the great multitude of altruistic equilibria in the repeated economy, and attempts to narrow down the set of these equilibria, see Kurz (1978).

14 The analogies with production theory and organization theory are self-evident. In the former, specific assets cannot be redeployed without sacrificing productivity. In the latter, common ownership is a device reducing the incentive of the component units to pursue “local goals.”

15 See Breton and Wintrobe (1982).

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