ECONOMICS AND PARENTING

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Economic models of marriage, fertility, and childrearing and the empirical studies they have spawned constitute important contributions to the science of parenting.

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INTRODUCTION

Pioneered by Gary Becker (1991), economic models of parenting behavior focus on how parents garner, organize, and allocate resources – primarily effort, time, and money resources – subject to various constraints imposed by their talents and skills, the policy environments in which they live, and the 24-hour day. Most economists presume that individuals make decisions – even fundamental decisions such as whether and whom to marry and how many children to bear - by choosing the alternative likely to provide the highest level of self-defined well-being to them and their children. Economists are generally unconcerned about whether their theories describe conscious decision-making processes provided that their theories predict behavior (Friedman, 1953).

Economists' models of parenting are wide-ranging, addressing questions such as why some people become parents and others do not, why some parents have many children and others have only one or two, whether parenting strategies are motivated by altruism or by self-interest, why some parents marry or remain married and others do not, why some non-custodial fathers are more engaged in parenting than others, and how family economic conditions and larger social policies affect parenting and child well-being. With some important exceptions noted below, economists do not distinguish among biological and other types of parents or caregivers.

Most economists are remarkably uncurious about the pathways by which parenting affects child well-being. Their models of child well-being posit linkages between child outcomes and the effort, time, and money expended and prices faced by parents, schools and communities.

But these models are typically of the black-box variety, with the mediating pathways remaining hidden inside the box. Although this approach does not provide a complete understanding of the determinants of child well-being, it provides an estimate of what happens when important "inputs" such as family income change.

For example, Duncan, Brooks-Gunn, Smith, and Yeung (1998) studied the causal impact of family income on children's completed schooling. Their models account for the fact that family economic conditions in early childhood, middle childhood, and adolescence may have different impacts on children's achievement, and that the impact of an increment to family income may be greater for poor than affluent families. But their research does not describe the processes by which income affects child well-being. Identifying mediating pathways may be crucial for a complete understanding of the nature of income effects, but not for estimating the impact of an income-transfer policy that would boost or lower parental incomes on child well-being.

Economists do not seek to explain individual differences in the behavior of parents. Instead, they focus on differences between groups (e.g., high vs. low-income families) or on differences within families across time in order to assess the effects of changes in prices, incomes, and other structural factors that, their theories suggest, may affect that behavior. Most economists acknowledge the role of individual tastes, preferences, and idiosyncrasies in decisions, but their theorizing deliberately avoids providing a center-stage spotlight for these factors: *de gustibus non est disputandum* (Stigler & Becker, 1977).

Thus, economists are unapologetic for failing to aspire to a complete explanation of the causes and consequences of parenting behavior, or any other behaviors they study. To economists, reducing statistical bias in the estimation of key model parameters is (nearly)

everything and explaining variance is (almost) nothing. Take, for example, economic studies of whether the generosity of the U.S. welfare system has promoted out-of-wedlock childbearing (Moffitt, 1998). A typical research strategy employed in this literature involves intertemporal comparisons of fertility rates of women living in states with different welfare benefit levels. It matters little to the economists conducting these studies whether their models account for 1% or 99% of the variation in fertility rates, so long as they secure arguably unbiased (and reasonably precise) estimates of the causal impact on the out-of-wedlock fertility rate of, say, an extra $100 in monthly welfare payments. Likewise, in the Duncan et al. (1998) study of family income impacts on children's schooling, low R-squared sibling-difference models were preferred to higher R-squared and more conventional child-focused models because the sibling models arguably provided less biased estimates of the causal impact of income.

Few economists have access to experimental data, yet they still aspire to causal inference in their analyses. They do so by constructing models, often sophisticated mathematical models, of family behavior (e.g., child well-being, completed family size). Critics often argue that economists' models are far too simplistic to explain behavior as complicated as parenting. Economists strive for models that are sophisticated enough to describe the essential features of the economic determinants of the behavior, but not so complicated as to be empirically intractable.

The empirical testing of economists' models involves the enumeration and, ideally, resolution of the various econometric problems that threaten their ability to draw causal inferences from the models. Coefficient bias and precision are uppermost in their list of statistical concerns; population representation of their data also matters, so long as it does not compromise their ability to secure unbiased estimates. Measurement issues that dominate

psychometrics are often given short shrift in part because economists take great comfort in the fact that, under fairly general conditions, measurement error in a dependent variable of interest does not bias regression coefficients (Greene, 1999). That measurement error in independent variables may induce bias is underappreciated in many economic studies.

In this article we review economic models of the family and provide examples of empirical studies they have spawned. We first review economic models of marriage and divorce and then consider tradeoffs among paid work, marriage, and both the number and the "quality" of children. We then review what economics has to say about childrearing strategies for both co-resident parents and non-custodial fathers.

MARRIAGE AND DIVORCE

Why should two individuals marry or permanently cohabit? The economists' "what's in it for me?" view of motivation for individuals' behavior leads them to predict that marriage and cohabitation will be more likely when individuals can attain a higher level of well-being as partners than when living alone. "Well-being" here is defined broadly by economists to include "children, prestige and esteem, health, altruism... and pleasure of the senses" (Becker, 1991, p. 8). Conversely, the dissolution of partnerships is predicted to occur when the benefits of the partnership falls short of what the partners could garner on their own (Weiss, 1997).

As with factory production, household "production" may be more efficient (and thus the total rewards to a partnership larger) if partners divide their labors so that each specializes in different types of work (Becker, 1991). An obvious division of labor is for one partner to specialize in paid work and the other to specialize in work at home, including childrearing. The division need not follow the traditional man-with-career and woman-at-home model. However,

labor market discrimination that limits the potential earnings of women may encourage a division of labor in which men work for pay and women are homemakers (Bergmann, 1986).

Specialization in market work enables an individual to make substantial career investments, for example by taking more training classes or putting in longer hours at work, and then reaping the rewards of a higher earnings trajectory. By the same token, if experience improves the quality of household work, then devoting more time and attention to housework may enhance the quality of that home-based work. The likely result of specialization is a partnership that combines to "produce" more at work and at home than would be the case if each of the two partners lived alone (Blau, Ferber, & Winkler, 1998; Weiss, 1997).

Suppose we apply these ideas to the larger marriage "market." In the aggregate, men and women with different backgrounds and proficiencies in working on a job and at home seek partners who may be similar or different in terms of background and proficiencies. Becker (1991) hypothesized and empirical studies confirm that marriages are more likely and longer-lived if mates have similar levels of education and religion (Jepson & Jepson, in press). But, based on specialization, Becker also hypothesized happier marriages among mates who differ in their productivity at work and at home. This is because a couple in which one spouse specializes in market work and the other specializes in childrearing and other household work are likely to "produce" more from their combined efforts than a couple with less specialization, and thus ought to be attracted to one another in the marriage market. This implies that one should observe negative assortative mating along dimensions such as labor market productivity (as measured, say, by wage rates), although the evidence here is not as strong as the evidence of positive assertive mating along dimensions such as religion (Behrman, Rosenzweig, & Taubman, 1994;

Weiss, 1997). Once married, comparative advantages in the home and market are predicted to be reinforced by specialization.

Marriage also provides a kind of private "insurance" against important financial risks such as disability and unemployment. A disabled person often receives extensive care from his or her partner that might otherwise have to be purchased at considerable expense. In addition, financial hardship, perhaps brought about by unemployment, can lead to a rearrangement of household roles. Indeed, studies indicate that, when a husband experiences economic loss occasioned by unemployment, his wife often increases her labor market activity to cushion the economic blow (Gruber & Cullen, 2000; Lundberg, 1985).

Another obvious advantage of co-residence or marriage is the "economies of scale" it generates. Although two individuals cannot live as cheaply as one, it does not take twice as many rooms, as much heat in the winter, as much electricity, or as many appliances for two individuals to live together as opposed to separately. These considerations bring roommates together, induce adult children to live with their parents, and may also influence the cohabitation decisions of couples, particularly those with few economic resources. The benefits of economies of scale will certainly not account for most of the variation in marriages and partnerships across time and cultures, but they may contribute to our understanding of how family cohabitation patterns change in response to, say, fluctuating costs in the housing market (Weiss, 1997).

Marriage also creates risks for partners who specialize in childrearing and other non-market work at the expense of labor-market careers. When coupled with inadequate child support and/or alimony payments, divorce can leave the non-market specialist, usually the stay-at-home mother, very badly off financially and bearing a larger proportion of the costs of childrearing (Duncan & Hoffman, 1985; Joshi, 1998).

Easily obtained divorces and badly functioning child-support systems produce a kind of economic "Catch 22." Partners who fear the divorce-related risk of specialization engage in less of it. For example, evidence suggests that the prospect of divorce may prompt wives' entries into the labor force (Johnson & Skinner, 1986) and reduce marital fertility (Waite & Lillard, 1991). But this results in partnerships that offer fewer total benefits for both partners than if specialization were unconstrained. As a result, economists predict, marriages are happier and more stable in a policy regime in which divorce courts and child-support systems are fairer to partners who specialize in childrearing (Nixon, 1997; Wright & Stetson, 1978).

An important recent innovation in economic research on the family is the recognition of strategic behavior on the part of two partners (Lundberg & Pollak, 1996). The productivity of the partnership determines the total size of the "pie" of goods and services available to the household, but does not explain how they are divided up between the partners. An equal division between partners is one possibility, but divisions that favor one partner over the other are also possible. Indeed, it is conceivable that the total gains from the partnership could be divided in such a way that one partner would be better off if the partnership were dissolved.

Economists and sociologists have developed "bargaining" or "exchange" models to predict behavior in situations in which two or more individuals may gain from trading or cooperating with one another (Binmore & Dasgupta, 1987; England & Kilbourne 1990). In the case of bargaining between parents who prefer to expend household resources in different ways (e.g., on his car, her clothes, or their children), the partner with more access to resources that can be shared with or withdrawn from the other is more likely to get his or her own way (Lundberg & Pollak, 1993; Manser & Brown, 1980; McElroy & Horney, 1981).

A key prediction of these bargaining models is that the higher the mother's potential earnings relative to the father's earnings, the more likely it is that disagreements are resolved in her favor. This is because the mother's earnings give both the father more to lose and the mother more to fall back on if the relationship ends. Even if there is no question of her leaving the relationship, the mother's earnings give her something to bargain with. Therefore, while theories of specialization suggest that both partners gain when one partner remains home, bargaining theories suggest that partners, usually wives, who specialize in homemaking may be disadvantaged by their role because it provides them with less power within the relationship.

Bargaining theory predicts that other economic resources will function in similar ways as mothers' earnings. For example, a strong child support enforcement regime, a supportive social welfare system for single parents, or a high level of potential kin network support also give mothers access to more resources were the couple to split up. As with her earnings, higher levels of these other resources strengthen the mother's hand in household decision-making (Lundberg & Pollak, 1993; Lundberg & Pollak, 1996; Manser & Brown, 1980; McElroy & Horney, 1981).

FERTILITY AND CHILD "QUALITY"

Why couples want to have children varies across time and place. Child labor and later provision of care to elderly parents are still important motives for having children in many parts of the world, and predictably lead to large family sizes (Hotz, Klerman, & Willis, 1997). But these motives are no longer important in most developed economies. Love and legacy are more universal motives that transcend both time and level of economic development (Peters, 1995).

What might account for differences in family size in modern economies? Economists argue that the costs of rearing children are a key consideration, as is the tradeoff between the number of children and the time and money expended on each child. Economists' conception of child "quality" is important here, since child quality is presumed to be enhanced through the expenditure of time and money. Quality itself is conceived in economic terms and is sometimes presumed to be reflected in the child's adult wage rate or wealth. Genetic endowments matter for child quality, but economic models presume that child quality is determined in large part by parental and societal investments (Behrman, 1987).

Consider a world in which one parent specializes in childrearing and the other in labor market work. Childcare in children's preschool years is especially costly because young children require intensive time "investments" from the parent in question. When, perhaps because of low educational attainment, the labor market prospects of a parent are bleak, the costs of staying home and therefore the costs of time investments in children are correspondingly low. Economic models predict that parents with poor labor market opportunities will spend the most time at home rearing children (Galor & Weil, 1996; Hotz et al., 1997).

Increased schooling improves labor-market prospects and therefore increases the costs of having and rearing children. Between 1950 and 2000, the proportion of U.S. adult women completing high school more than doubled, from 36% to 84%, and the proportion completing college more than quadrupled, from 5% to 24%. These huge changes, economists would argue, should drive many women into the paid labor force, generate a huge market for formal childcare, and reduce family sizes, all of which have indeed happened (Hotz et al., 1997).

In a more cross-sectional sense, we should observe systematic differences across parents who differ in their labor market opportunities. Because the value of their time is higher, women

with higher levels of schooling should work more, use more formal childcare arrangements, and have fewer children than otherwise similar women with lower levels of schooling. These predictions also receive support in most empirical work (Hotz et al., 1997). Similarly, rising wage rates of women have created an incentive for women to leave home for employment, and economic studies have suggested that a substantial proportion of the increased labor force participation of women can be attributed to the increase in their potential earnings (Bergmann, 1986).

The presumed tradeoffs between child quantity and quality have been accorded considerable attention by economists (Becker & Lewis, 1973; Hanushek, 1992). Suppose that a parent with promising career prospects views the time investment in rearing three children as too costly. The choice still remains between rearing two children and expending "average" amounts of effort, time, and money on each or rearing just one, much doted upon, child.

When parents expect to invest similar amounts of effort, time, and money in each of their children, the tradeoff between quality and quantity can be multiplicative. Relatively small changes in the price of child quality may have large effects on the desired number and quality of children (Peters, 1995). For example, suppose that a small increase in women's wage rates drives up the costs (especially forgone wage costs) of rearing a child to a given "quality" level. Because the increased cost applies to all children, parents wanting to maintain the same level of child "quality" may reduce substantially their desired total family size (Hotz et al., 1997).

CHILDREARING

The kinds of strategic behavior economists presume for adult partnerships characterize their approach to parenting as well. Becker's (1991) economic model of the family envisions parenting as allocating resources among children to accomplish parent-specified goals. Resource constraints force parents to choose between spending effort, time, and money on themselves and on their children. Such constraints also force adult children to choose between spending effort, time, and money on themselves and on their elderly parents (Zarit & Eggebeen, 2002).

Economic models of the family presume that family members care more about each other than individuals outside the family. Such altruism is often captured in parenting models with the assumption that increases in a child's well-being provide benefits to the parent, although parents may differ in the extent of their altruism toward their children (and toward each other) (Becker, 1991).

Peters and her colleagues (2000) conducted laboratory experiments to test for altruism in parent and child behavior. Parents and children ages 9 to 12 years old were given $.50 each and asked to contribute none, some, or all of it to a group fund. They were further told that the money in the group fund would be doubled by the experimenter and then distributed equally among group members. These conditions ensure that contributing nothing to the pot maximizes individual reward, while contributing everything maximizes total group income. The experiment was repeated eight times, with random assignment of all participants to groups that either involved other family members or strangers. Results showed that both parents and children contributed more to the group fund consisting of other family members than the group of strangers. Furthermore, parents were uniformly more likely to contribute to the group fund than children. This confirms economists' predictions that parents are indeed more altruistic toward their children than toward strangers.

Some economic models posit that parents use household resources strategically as incentives to reward good behavior and punish bad behavior. Several features of these models are noteworthy. The first is Becker's famous "Rotten Kid" theorem (Becker, 1991). Suppose a selfishly misbehaving child threatens to garner more than his or her share of household resources. Parents can respond to this misbehavior by reallocating resources away from the misbehaving child, thus providing strong incentives for good behavior (Behrman, 1997).

Unur, Peters, and Schulze (2001) conducted experiments to test whether parent contributions to two of their children are affected by children's misbehavior. Adolescents 12 to 18 years of age were randomly allocated an amount that varied between $0 and $2. Parents were then given $1, and asked to allocate all of it between their two children after observing the two amounts allocated to the children in the first stage of the experiment. Parents tended to allocate their dollars in a way that compensated children for inequities in the first stage. Then experimenters added a child misbehavior element – children allocated their first-stage money were offered a 40% chance to double their money. The 40% figure was chosen because it constituted an unwise gamble for doubling the payoff. Parents observed whether their children took this bet and then were asked to allocate $1 between their two children. In this case, parents were much more likely to make equal rather than compensating allocations to their children, implying an unwillingness to compensate their children for taking a foolish gamble. If generalizable to other misbehavior, this implies that parents are indeed willing to reallocate household resources away from misbehaving children, thus supporting Becker's Rotten Kid Theorem.

Wineberg (2001) argued that parents' ability to provide financial incentives for good behavior is inversely related to their use of corporal punishment. Richer households are

unconstrained in their ability to use financial incentives to bring about a desired child behavior, whereas poorer household may be severely constrained in their ability to provide financial incentives, and may have to resort to other forms of rewards and punishments, including, perhaps, corporal punishment. Thus, consideration of financial incentives predicts, and evidence supports, that corporal punishment is more likely to be observed in low- than in high-income families.

A more policy-relevant prediction from a strategic view of parenting is that households may respond to resources expended on children from outside the family by reallocating resources within the family (Behrman, 1997). For example, suppose that space constraints only allow one of twin siblings to enroll in an enrichment program such as Head Start. Parents may respond by devoting more of their time and attention to the nonenrolled twin and less to the enrolled twin, thereby implicitly reallocating some of the first twin's resources to the second so that each child receives the same overall amount of resources, albeit from different sources. An important implication is that evaluating the policy impact of a program like Head Start may require assessing impacts on the siblings of the enrolled children. Considering only the first twin's attainments might well underestimate overall program impact (Seitz, 1994).

Although not an unambiguous prediction of economics models, there is considerable evidence that, relative to fathers, mothers care more for their children's well-being in the sense that they are more willing to spend money on them (Behrman, 1997; Lundberg& Pollak, 1993). Lundberg, Pollak, and Wales (1997) tested this proposition using British data from a "natural experiment" in which child allowance payments were no longer given to fathers in the form of wage supplements, but sent as a check to mothers. If mothers care more about children than fathers, then this change ought to increase expenditures on child-related goods (e.g., children's

clothing) and decrease expenditures on father-related goods. Expenditure data revealed that the policy change indeed increased expenditures on children.

Combining the assumption that mothers care more than fathers about their children with a bargaining model leads to the prediction that, as long as the parents are a couple, increasing mothers' resources will help children because mothers use more of their resources to meet children's needs. Additionally, the increase in resources may improve a mother's bargaining position with the children's father, and if she recognizes the values of his investment in the children, she may be able to increase the time the father spends with his children.

To know the *overall* effect on children's well-being of an increase in mothers' resources, we also need to know the effect of such resources on the likelihood that parents will break up. As described earlier a mother's increased bargaining power should improve her bargaining position in the relationship, which should make family decisions better for both her and her children. But the same resources that provide mothers with more leverage in the relationship also enable them to leave the father, because they will have more resources to support themselves. If parents split up, then a father's provision of effort, time, and money to children usually drops. The net effect of increases in mothers' bargaining-relevant resources on children depends very much on whether the improved bargaining ("voice") or leaving ("exit") response dominates (England & Kilbourne, 1990).

When parents no longer live together, there is less to bargain over, because parents share few activities or resources. What custodial mothers are likely to care most about is money from the father, and getting him to spend the amount of time with the child that she thinks is best for the child. What fathers are likely to care about (besides the amount of child support assessed) is maintaining access to the child and exerting some influence over the child's upbringing. The

mother's earnings give her no bargaining leverage with the father, because she cannot threaten to withdraw what she no longer shares with him. She can, however, deny the father access to time with the child, or report the father to authorities if he has not paid child support. If the mother does not want the father to see the child, she may forgo some or all of his money to discourage his involvement. If she thinks his involvement is good for the child, she may let him see the child even when he provides little or no money.

Weiss and Willis (1985) extended bargaining theories to consider how fathers' difficulties in observing mothers' behavior may be particularly relevant for understanding the allocation of money to children when the parents do not live together. They argue that non-custodial fathers are less willing to provide money than resident fathers, because they cannot monitor the mother's allocation of child support payments for her own consumption or for the children. They presume that non-custodial fathers are concerned that mothers will divert child support payments to their own use, for example by reducing their own funding of child-related expenditures. Mothers who have children by two men, only one of whom is making payments, may divert part of the payment they receive to another man's child. Even worse, she may divert payments to a new boyfriend.

If monitoring ability affects how much money men are willing to share with their children, then we would expect that financial contributions of fathers would be similar in married and cohabiting couples and quite different in situations involving non-custodial fathers. Monitoring problems will also lead men to prefer to buy things for their children directly rather than giving the mother cash. Weiss and Willis emphasized how much easier it is for a resident than a nonresident father to monitor how his financial contributions are spent.

CONCLUSIONS

A number of ideas embedded in economists' approaches to family dynamics are worthy of consideration by other social scientists interested in parenting behavior. One is that family size and structure are, in part, choices made by adults that should not be presumed to be exogenous (i.e., unrelated to characteristics of parents) in parenting studies. If parents trade off the number and "quality" of their children, then parenting practices between families with smaller and larger families may systematically differ because of the different preferences (e.g., desire to devote unusually large amounts of time and money to one child vs. less time and money to two or three children) that led to the differing family sizes in the first place.

By the same token, studies of the impact of divorce on children should consider what leads some spouses to leave marriages, while others in comparable circumstances are able to "bargain" for more satisfactory marriage terms. Studies of step-parenting should consider why some men and women are willing to become step-parents and others not. Similarly, assessments of the parenting practices of non-coresident fathers need to consider the circumstances and characteristics (e.g., importance of the child to the father) that lead some fathers to continue to live with their children, but others to leave.

Economists' approaches to parenting issues show that "black box" studies can have great value. Take, for example, the important question of whether family income has a causal impact on child well-being. The "black box" issue is the size of these causal impacts, and not a full accounting of the ways (e.g., reduced parental stress, an enriched home learning environment) in which higher incomes improve child well-being. For policy studies, one does not need to know all of the ways in which a policy-induced change in an income transfer program affects parent behavior or child well-being to judge whether such a policy is worth funding. For developmental studies, empirical work that begins with "reduced form" causal estimates before launching into a

full-fledged structural model can help to set the stage and provide an important point of comparison with other studies in the literature.

A final insight from an economic approach is that strategic behavior on the part of parents may further dilute or magnify the impacts of policies that seek to help individual children. We noted the example of Head Start; one can think of many other instances involving compensatory schooling programs and payment to families for the care of disabled children where the "filter" of family strategic behavior may produce behavior that is more in keeping with parents' than policy-makers' goals.

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