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IS THE U.S. EXPERIENCING A "MATRILINEAL TILT"?: GENDER, FAMILY STRUCTURES AND FINANCIAL TRANSFERS TO ADULT CHILDREN

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Abstract

Furstenberg, et al. (1995) suggested that one unanticipated consequence of current high levels of divorce might be a “matrilineal tilt” in intergenerational wealth flows. This paper uses six waves of the Health and Retirement Survey (1992 to 2002) to investigate this possibility with respect to financial transfers from parents to their adult children. We find that while divorced single mothers are less likely to make transfers to their adult biological children than divorced single fathers, much of this difference is attributable to lower socioeconomic status among single mothers. In contrast, remarriage substantially reduces the odds that fathers make transfers while increasing women’s transfers to children. Our findings are consistent with both socio-evolutionary and exchange theories predicting women's versus men's investments in biological- versus step-children. We conclude that women appear to be more successful than men in channeling resources toward their adult biological children.

Introduction

Since the mid-twentieth century, American society has witnessed remarkable changes that may transform the way financial resources are transferred from parents to their adult children. Among the most notable trends are: 1) a prolonged financial dependence of adult children on their parents, 2) a dramatic rise in the rate of divorce and remarriage, and 3) a steady increase in women's labor force participation and control over assets and wealth. Much recent scholarly and media attention has been given to what is sometimes dubbed the emerging stage of "adultolescence." It is becoming increasingly common for children above the age of 18 to remain at home, supported at least partially by their parents, particularly while they are completing schooling (Fussell & Furstenberg 2005). After leaving home, children often expect and receive considerable financial assistance from their parents well into their 20s and 30s to help pay for college and other educational or vocational training, weddings, and new houses. Parents may also be called upon to help out during difficult circumstances, such as job loss, divorce, or illness (Aquilino 2005, Goldscheider et al. 2001, Ploeg et al. 2004). At the same time, the "divorce revolution" that occurred between the mid-1960s and the late-1970s, when divorce rates more than doubled, means that a sizeable proportion of the biological parents of today's adult children are no longer married to each other and may have acquired new spouses (Furstenberg 1994). The introduction of step-parents, who may or may not have previous biological children of their own, undoubtedly complicates the provision of financial transfers to adult children. Who gets what assistance and who makes these decisions can be a touchy issue, especially when norms about step-parent and step-child relationships are not clearly defined (Cherlin & Furstenberg 1994, Cherlin 1978). Added to this mix is women's increasing control over individual and household resources, through both their increased participation in the labor force and their rising levels of wealth (Raley et al. 2006). The confluence of these three forces has important implications for intergenerational wealth flows that have yet to be fully understood, but which are likely to differ radically from the past.

Historically, financial transfers from parents to adult children occurred primarily through inheritance. Before 1840, when the practice of coverture under common law dictated that all property women brought into marriage or subsequently acquired was legally owned by their husbands, women were generally unable to transfer wealth to their children either while they lived or upon their deaths (Gundersen 1998). By contrast, when married men died, two-thirds of their estate was transferred directly to their children, while one-third was reserved for the support of their widows (Seed 1995). Consequently, the bulk of wealth flowed directly from fathers to their children and mothers were viewed more as "competitors" for wealth transfers than as sources of financial assistance to their adult children (Shammas 1987). Changes in women's rights to control and manage property and to hold jobs outside the home have dramatically shifted mothers' financial situation vis-à-vis their children. Equally important, today divorce rivals spousal death as the most likely cause of marital dissolution (Cherlin 1992).

Such changes have important implications for how wealth flows from one generation to the next, particularly since divorced mothers maintain far greater contact with and support from their adult biological children than do divorced fathers, according to a large and growing body of literature (see Kalmijin 2007 for a thorough summary). A much smaller body of research assesses whether these stronger maternal intergenerational ties translate into greater financial transfers from mothers to their biological adult children following divorce and remarriage. The potential presence of such effects has prompted some researchers to suggest that the U.S. may be experiencing a "matrilineal tilt" in its kinship system (Furstenberg et al. 1995). This paper investigates this possibility by examining the effects of divorce and remarriage on financial transfers to adult children from their biological parents' households. We pay particular attention to gender differences in the effects of divorce and remarriage on parental financial transfers. Specifically, we ask: Do single divorced mothers give less than single divorced fathers, after controlling for differences in their financial resources? Does remarriage provide women with new opportunities to divert household resources toward their biological children, while

simultaneously hindering men's ability or willingness to financially support their adult biological children? Controlling for available parental resources and for characteristics of adult children, are divorced fathers more likely to give cash transfers to their biological children if they're single than if they remarry? Does the same relationship hold for mothers? To address these questions we use data from six waves (1992 through 2002) of the Health and Retirement Survey (HRS). The use of this large, longitudinal data set allows us to employ several different analytic strategies to tease out potential reporting and selection biases as well as to mitigate the effects of unobserved fixed characteristics of the parents or children.

Theoretical Perspectives and Previous Empirical Findings

Although much of the recent sociological research on transfers between generations leaves its guiding theory unstated, such research is most often implicitly influenced by some form of socio-evolutionary theory, intergenerational exchange theory, or, in some cases, both. Here, we briefly review the predictions of evolutionary and exchange theories for the association between parental family structure and intergenerational transfers and discuss the findings of previous empirical research.

Socio-Evolutionary Theories of Parental Investments

Socio-evolutionary theories predict differences in how much parents invest in children by their degree of genetic relatedness and by the sex of the parents. Parental investment is generally defined as a contribution toward a particular offspring's survival that entails some cost to the parent (in terms of resources, time, energy, and, importantly, the parent's ability to make investments in another offspring) (Daly & Wilson 1987, Nielsen 1994). "Hamilton's Rule," which states that individuals will exhibit sympathy toward and favor others in proportion to the degree to which they are genetically related, suggests that parents will invest in their biological children but not in their step-children (Bergstrom 1996). This principle is consistent with men's

supposed reluctance to "raise other men's children" and related insecurities about the paternity of the children they are raising (Nielsen 1994). Given that women, as the bearers of children, are certain of their genetic relationship to the children they raise, less has been written about their relative willingness to "raise other women's children." Yet, gender differences in reproductive strategies suggest that women may have stronger incentives to follow Hamilton's Rule than do men. To maximize the number of surviving offspring, individuals may adopt either a parental investment strategy (directing resources toward existing offspring) or a mating strategy (attempting to produce more offspring). Because the costs of producing more offspring are lower for men than for women, men tend to favor the mating strategy, while women tend to favor parental investment strategy (Trivers 1972). The key insight provided by Anderson, Kaplan and Lancaster (1999b) is that these two strategies are not always in opposition to one another. Instead, they argue that, as part of their mating strategy, men may be willing to provide resources to a woman's previous children (to whom they are not genetically related) in order to improve their chances of securing her as a mate and having children with her (Anderson et al. 2001). This arrangement also complements women's preferred strategy to invest in existing biological children. From a theoretical perspective, then, we might expect that, on average, men may be relatively more willing than women to support non-biological children.

Empirical studies suggest that, while not being entirely deterministic, evolutionary theories provide substantial explanatory power. In their study of parental investment in young children, Biblarz and Raftery (1999) find that the evolutionary theoretical framework offers a more consistent explanation of their empirical findings than the other six theories they consider. However, they argue (and find) that any step-parent will act as competitor for resources and therefore diminish parental investments, whereas Anderson and his colleagues (1999b) contend that the addition of a step-father may increase total investments in a woman's previous biological children. Anderson and colleagues (1999a, 1999b) found that men invest equally in their co-resident stepchildren (mating effort) and in their non-co-resident biological children (parenting

effort). Perhaps because relatively few biological mothers live apart from their children, there are no comparable studies involving mothers and stepmothers. However, Case, Lin and McLanahan (1999) found evidence of lower investments in children (in the form of spending on food) by households with a step-mother and biological father than in those with biological mothers, but there were no differences in spending on food for children living with their biological father versus their step-father. Studies examining blended families in which both biological and step-children co-exist in the same household also tend to find that the biological children of the mother are favored relative to her step-children (i.e. the biological children of the fathers). Case, Lin and McLanahan (2001), for example, found that children raised by a step-mother received, on average, a year less schooling than did the biological children of the same woman. These results are consistent with evolutionary theory's prediction that women invest more in parenting effort relative to men, leading women to direct resources toward existing biological children over stepchildren, while men direct resources to both. Whether these differential investment strategies persist after the child leaves the household is difficult to determine. Zvoch (1999), for example, finds that parents of high school seniors plan to devote significantly fewer economic resources to step-children's than to biological children's college education, but they do not differentiate between men's and women's step-children.

Exchange Theories of Intergenerational Transfers

While socio-evolutionary theories focus on understanding reproductive strategies and, hence, parental investments in young children, theories of intergenerational exchange are often applied to parent-child relationships later in the life course. In their summary of the intergenerational exchange literature, Ganong and Coleman (2006) distinguish between intergenerational exchange theories based on reciprocity—for example, those that assume parents invest in children because they expect those children to care for them in their old age-- and those that are based on a looser sense of intergenerational solidarity, suggesting that transfers are

associated with the degree of closeness between family members and serve as both a symbol of that closeness and a means for binding the generations together. Levels of intergenerational exchange are most often measured in terms of provision of time, emotional support, and financial transfers between parents and their adult children. These transfers can flow in both directions, but in general adult children tend to provide care and support to their older parents, while the overwhelming majority of financial transfers flow from parents to children, at least until their parents reach the age of 70 (Cooney & Uhlenberg 1992).

The bulk of the literature to date focuses on the impact of divorce and remarriage on upward transfers of emotional support, social contact, and care from adult children to their older parents. Both the reciprocity and the solidarity perspective would predict that divorce and remarriage would weaken upward transfers, particularly to fathers. Specifically, if the divorce occurred before the child left the home, there will be reduced contact with and support from non-custodial parents (primarily fathers) resulting in a diminished sense of obligation (according the reciprocity perspective) as well as reduced closeness (according to the solidarity perspective). In his thorough review of prior studies of the effects of divorce on upward transfers from adult children, Kalmijn (2007) concluded that *all* studies found that divorce reduced contact between fathers and children, but there was considerable variation across studies in whether divorce was associated with reduced contact between mothers and their biological children (more recently, see also Lin 2008). In addition, Kalmijin finds that remarriage further weakens ties between parents and their adult children, with this effect being stronger for fathers than mothers. Kalmijin interprets these findings through the lens of intergenerational solidarity and argues that women in their role as "kinkeepers" are primarily responsible for maintaining family ties.

If women act as "kinkeepers" and play an instrumental role in maintaining and regulating the upward flows of transfers of care and support from adult children, do they also serve as "holders of the purse-strings," moderating when and to whom downward financial transfers are made? Although some evidence suggests that gift-giving may be a household spending domain

over which women have more control than men (Woolley & Marshall 1994), overall, the empirical evidence addressing this question is rather thin and the theoretical implications of intergenerational exchange theory are ambiguous. On the one hand, theories of reciprocity might indicate that mothers are more likely to have already "paid their dues" and, thus, not be expected to provide their adult children with additional financial support. On the other hand, mothers may wish to secure their investment in their children through continued financial support, so that in years to come they will be assured of their support. The theory of intergenerational solidarity unambiguously suggests that to the extent that women are closer to their adult biological children, they will also be more likely to provide them with financial transfers.

A handful of articles have addressed the effects of divorce (and, to a lesser extent, remarriage) on financial transfers to adult children. Many of these articles either face substantial data limitations or fail to examine whether these effects differ for mothers versus fathers. Studies generally agreed that divorced parents give or are willing to give fewer financial transfers to their adult children than parents who remain married to each other, although at least part of this difference may be attributable to lower levels of wealth following divorce (Cooney & Uhlenberg 1992, Eggebeen 1992, Furstenberg et al. 1995, Marks 1995, Pezzin & Schone 1999, White 1992). Unfortunately, many of these studies rely on data from the National Survey of Families and Households (NSFH), which asks about transfers to *any* child and does not indicate whether or not this child is genetically related to the parent (Cooney & Uhlenberg 1992, Eggebeen 1992, White 1992). The one study that draws on data from the Health and Retirement Survey (HRS), which does ask about transfers to specific children, analyzes transfers at the household-level rather than the adult child-level, limiting their ability to make direct comparisons between step- and biological children, while controlling for key parental and adult child characteristics (Killian 2004). Other studies examine parents' *attitudes* toward giving financial support or children's *perceptions* of their parents as a *potential* source of help rather than actual transfers (Aquilino 2005, Cooney & Uhlenberg 1992, Marks 1995). Using data from AHEAD, Pezzin and Schone

(1999) found that divorce reduced cash transfers from single elderly parents (over the age of 70) to their adult children, particularly for fathers. They also found that having ever been remarried further reduced cash transfers, but given their sample of single parents, they could not examine whether being currently remarried affected transfers. Using supplementary data from the 1988 PSID, Furstenberg, Hoffman, and Shresha (1995) offer the most thorough investigation of the effects of marriage and divorce by gender. They find that 28% of parents who remain married transferred money to one or more of their children in the last year. In comparison, about 22% of divorced mothers but only 11% of divorced fathers gave their children financial assistance. They also tested whether remarriage had any effect on economic transfers to children and found that remarriage reduced fathers' propensity to give assistance more than mothers', but that none of the effects of remarriage were statistically significant (Furstenberg et al. 1995). In comparison, in his household-level analysis of the HRS, Killian (2004) found that 31% of households with paternal step-children made transfers to their adult children compared to only 21% of households with maternal step-children made transfers.

Other Predictors of Financial Transfers to Adult Children

Beyond divorce and remarriage, several other characteristics of parents and adult children are likely to be associated with financial transfers. Perhaps most importantly, parents' ability to give financial assistance will affect their actual transfers. Divorce tends to reduce household wealth, especially for women, while remarriage increases it. Race and ethnicity have also been found to be important with African-Americans consistently engaging in fewer intergenerational transactions than Whites (Hogan et al. 1993, Lee & Aytac 1998). Parents' educational status, age, and overall health may also affect whether and how much they give to their adult children. Parents with more children and step-children tend to give less to each child (Killian 2004). The adult child's characteristics and needs also influence whether they receive financial help from their parents (Hao 1996). Parental financial support typically declines with the age of the child

(Cooney & Uhlenberg 1992), while whether sons or daughters receive more help depends on the type of help (Cooney & Uhlenberg 1992). Finally, economic need appears to be important, but current marital status of the child is not highly predictive of transfers (Eggebeen 1992).

Data and Methods

Sample

This study uses longitudinal data from six waves of the Health and Retirement Survey's (HRS) main cohort, spanning from 1992 to 2002. The HRS main cohort is drawn from a stratified random sample designed to be representative of households with at least one member born between the years of 1931 and 1941 (approximately 51 to 61 years old in 1992 and approximately 61 to 71 years old in 2002). The survey oversampled Blacks, Hispanics, and Florida residents. Extensive information was gathered on the individual and household characteristics of the main HRS cohort respondents, including income and assets, health, and marital status and histories. Because we are interested in the effects of divorce and remarriage on transfers to adult children, all never-married parents in the HRS were dropped from our sample. The survey includes detailed information on intergenerational transfers. Particularly important for this study is the fact that, unlike the NSFH, the HRS asks specifically about transfers to each adult child, including both biological and step children of the family respondent in the parental household.[1] Thus, we are able to identify transfers to specific adult children and determine their relationship to the adults in the parental households. In addition, the HRS collected information about each child's own socio-demographic characteristics.

Although the information in the HRS was collected from parents, our analysis is conducted at the level of adult child (over the age of 18). We pool data from the six survey years, resulting in a sample of 80,007 observations on 22,517 individual adult children. Thus, our unit

of analysis is adult children survey years. In addition to attrition through the loss of HRS respondents across survey waves (through death or inability of HRS to contact the household), our focus on the adult children adds some further complexity to who is included in different years. For example, because we are interested in transfers to adult children, we include only children over age 18 in our sample. Thus, a child who was under 18 in 1992 but reached age 18 some time before 2002 will first appear in our sample at a later survey wave. The largest number of adult children, representing 21% of the sample, is represented in all six survey years, while 17% are represented in only one year.

Analytic Strategy

In our basic model, we draw on this pooled cross-sectional sample to examine how the adult child's relationship to the parental household is related to the probability that he or she was given a financial transfer of over $500. In our initial logistic regression, we include dummy variables for each survey year. In all our models, we also use robust standard errors, which are clustered at the parental household level because there are multiple observations on individuals across the waves and potentially more than one adult child per parental household. We then add controls for parental household characteristics and adult-child characteristics to examine how the inclusion of these variables modifies the effect of parent-adult child relationship on financial transfers.

Despite the inclusion of these control variables, however, our results remain vulnerable to biases from both the selectivity into different parental households as well as the study design. We therefore conduct additional analyses to explore the extent of three potential sources of bias. First, divorce and remarriage reflect a highly selective process and thus, for example, women with only their own biological children may differ in unmeasured or even unobservable ways from women who have step children. In our second set of analyses, we rely only on data from "blended families" to minimize these selection effects. We define blended families as households

containing both a biological child of the mother as well as a step-child of the mother,[2] and we use reports given solely by the mother.[3] The biological child of the mother could be from either a previous marriage or her current marriage. Because the same woman is thus reporting transfers to different kinds of children within her household, this analysis avoids bias due to unobserved characteristics of stepmothers. In our pooled sample of blended families, we are able to identify 5,131 adult children in blended families at least once, resulting in a total sample of 13,377 observations of these children across all six waves.

The second potential source of bias stems from how the HRS was administered. Specifically, within all couple households, in an effort to minimize the burden imposed on any one respondent, HRS designated one adult in the couple as the "family respondent" (who reported all transfers to and from parents and children) and the other adult in the couple as the "financial respondent" (who reported income, assets, etc.). Based on a belief that women are likely to be more informed than men about family relationships, the HRS (particularly prior to 1998) gave preference to the female in a couple as the family respondent. As a result, the large majority of HRS households with remarried parents of adult children are based on women's reports about financial transfers to her adult biological children (i.e. his step-children) and her step-children (i.e. his biological children). This preference for female family respondents—and the resulting over-representation of stepmothers—as reporters of financial transfers could generate two potential sources of bias. First, step-parents may be generally less knowledgeable about their stepchildren, and in particular about transfers to their step-child. Thus, step-parents may "under-report" transfers to adult step-children simply because they are unaware that their spouse gave money to his or her biological child. This bias could be quite large for relatively small financial transfers, but we expect it would diminish as the size of the transfer increases (particularly in cases in which the transfer would affect the parental family's budget). A second form of bias may arise from selectivity among remarried fathers who *are* selected as the family respondent. The relatively small percentage of remarried men who act as the family respondents (only 0.6%

of our sample) are likely to represent households in which the adult female was unavailable, unable, or unwilling to be interviewed. These may also be households in which men may have particularly close relationships with their children.

A third potential source of bias is with respect to divorced, single fathers in the HRS. About one-fifth of non-co-resident fathers do not remain in any kind of contact with their children (de Graaf & Fokkema 2007), and such men may not even report those children when surveyed (Cherlin et al. 1983). As a result, those single divorced fathers in the HRS who do report having children are likely to be a select group, who are more likely to be engaged in exchanges with those children. To partially address both the second and third potential source of bias, we create a third sample which is limited only to respondents' reports of their biological children. We then run fixed-effects models on this sample. Removing step-parent reports reduces our total number of observations across all waves from 80,007 to 69,791. This analysis avoids potential problems with step-parents' knowledge about transfers as well as addressing concerns about potential unobserved fixed characteristics of fathers or mothers in our sample. For example, the fixed effects analysis should help address potential bias based on the selectivity of remarried and divorced fathers who were chosen to be the family respondent (see discussion above). However, because we suspect that the selection effect for remarried fathers who were family respondents was stronger than for divorced fathers, if anything, these analyses may overstate the propensity of remarried fathers to give to their biological children relative to single divorced fathers.

Measures

Dependent Variable

Transfer to child. Table 1 provides descriptive statistics on the variables included in our models.[4] The dependent variable is a dichotomous variable based on a question in the HRS that asked the family respondent whether he or she or his or her spouse or partner[5] gave financial help to any of their children totaling $500 or more during the intervening two years since the prior HRS

interview.[6] If the answer was "yes," the respondent was asked to specify which of the children associated with the household received such transfers. Our dependent variable equals one if the adult child received a transfer and equals zero if he or she did not. In the pooled analysis sample, 18.1% of adult children had received such a transfer in the preceding interval, which is roughly comparable to the 16% reported to have received transfers over $200 in the NSFH collected in 1988 (Hogan, Eggebeen & Clogg 1993).

Independent Variables

Parent-child relationship type. The key independent variable in our analyses indicates the adult child's relationship to the parental household. This categorical variable is defined as follows: with respect to the adult child the parental household consists of 1) two biological parents (reference category), 2) biological mother and step-father, 3) biological father and step-mother, 4) single biological mother only, and 5) single biological father only. The distribution of adult children by their relationship to their parents in our three samples is presented in Table 1. Not surprisingly, category 1 (child is biologically related to both parents) is most common when we restrict our sample to biological family respondents, while households with step-mothers and biological fathers comprise a larger fraction of our blended households sample.

In the analysis that considers only responses by female respondents with blended families, these indicators are limited to the first three above. Thus, in our blended family sample, 48% of the adult children are biologically related to both parents, 45% are the biological child of the man and the step-child of the woman, and 7% are the biological child of the woman and the step-child of the man. By contrast, because of the bias in favor of female family respondents, in the sample that includes only biological parent respondents, only 0.7% (N=489) of the adult children are the biological child of the man and the step-child of the woman.

Table 1: Descriptive Statistics on Financial Transfers and Parent and Adult-Child Characteristics for Three Different Samples [about here]

Parental household characteristics. Prior evidence suggests that a variety of socio-demographic and economic characteristics of parental households influence transfers to children. We use the race variable available in the HRS, which distinguishes among three categories: White (the reference category, which comprises 78% of the sample); Black (18%), and other (4%). In addition, we include an indicator that is equal to one if the family respondent is Hispanic (11.5%) and equal to zero otherwise. We also include a continuous measure of the respondent's age, and a categorical education variable, which is coded as 1) less than high school (the reference category), 2) a high school degree, 3) some college, and 4) a college degree or more. To take into account the older parent household's ability to give, we include measures of the natural log of the value of the household's housing assets, the household's non-housing financial assets, and the household's annual income. In addition, since parental household resources may be distributed across all children affiliated with each household, we include measures of the number of biological siblings, step-siblings, and half-siblings with respect to each adult child.

Not surprisingly, parental household characteristics of blended-families differ from our full-pooled cross-sectional sample. On average, blended families have lower levels of housing and financial assets, but higher current income. Mothers in blended families are also younger.

Adult child characteristics. Because the adult child's own characteristics may also influence transfers to him or her, we include the following measures: an indicator equal to one if the adult child is female, zero otherwise; an indicator equal to one if the child is married, zero otherwise; and a continuous variable measuring the child's age. Finally, transfers to a given adult child are likely to depend on the number and composition of that child's siblings.

Results

Table 2 reports the odds ratios from logistic regressions of transfers to adult children on the parent-child relationship alone (Model 1), the parent-child relationship and the parent's characteristics (Model 2), and the Model 2 variables plus the adult child's characteristics (Model 3). All models include indicators for each survey year. The first model confirms our expectation that, in general, transfers from biological mothers' and fathers' households are lower following divorce and/or remarriage than from two biological parents who remain married to one another. Indeed, in the case of a remarried biological father (i.e. a parental household with a biological father and stepmother), the odds that the adult child receives a transfer are reduced by half. All of the reductions in the odds of transfers are significantly different relative to married-biological-parents, except for single divorced fathers. This result likely reflects the selectivity of divorced fathers who maintain relationships with adult children.

While our findings are consistent with the literature on the impact of divorce on parent-child relationships, our main comparisons of interest are not with married biological parents. Instead, we are interested in whether remarriage following divorce differentially affects transfers to adult children according to the sex of the biological parent. For biological fathers, Model 1 shows that, without any income or other controls, divorced fathers are only moderately less likely to make transfers to their adult children while they remain single. If divorced biological fathers are remarried, however, the odds of providing financial support to their adult children drops dramatically (from 0.89 to 0.49). For biological mothers, being single is associated with providing far less financial support to their adult children, but getting remarried actually increases the odds that they provide financial support (from 0.61 to 0.79). Thus, we find that divorced single fathers are more likely than divorced single mothers to make transfers to their adult biological children, most likely because men fare better financially than women after divorce, as well as because of the selectivity of the single fathers. However, remarried fathers are

significantly less likely than remarried mothers to help financially support their biological adult children.

Table 2: Effects of Parent-Child Relationship and Other Socio-Demographic Characteristics on the Odds of Adult Children Receiving Any Financial Support [about here]

To help take into account the ability of parental households to make transfers as well as the total number of children to whom the household might make transfers, Model 2 adds controls for the characteristics of the family respondent and parental household, including all children associated with the parental household. In the case of single divorced mothers—those whose financial circumstances are most likely to limit their ability to make transfers—there is no longer a significant difference in the odds of a transfer relative to remarried mothers. By contrast, the inclusion of variables controlling for the parental household's ability to pay actually *reduces* the odds that an adult child will receive a transfer from a biological father-stepmother household (from OR = 0.49 without controls to OR = 0.34 with controls), suggesting that these households give little relative to their ability to pay. In Model 3, which includes characteristics of the adult child as well as characteristics of the parental household, the basic pattern established in the bivariate analysis remains. Single divorced fathers, however, are now significantly less likely to make transfers relative to households with two married biological parents. In addition, key gender differences remain important: remarried biological fathers are less likely to give than those who remain single, and a remarried biological mother is significantly more likely to help her biological adult children than a remarried biological father is to help his biological children. Indeed, across all three models, biological father/step-mother families stand out for being least likely to make contributions to adult children.

For ease of interpretation, Figure 1 displays the probability that an adult child receives any transfer over $500 according to the parent-adult child relationship type in 1998. The first set of percentages refers to the probability of receiving a transfer without any additional controls (Model 1), while the second set of percentages are calculated holding parental and adult-child characteristics constant at their mean or modal values (Model 3).[7] Our results without any controls reveal very different implications of remarriage for mothers and fathers. While remarried mothers are more likely to give to their biological children than single divorced mothers (21% vs. 17%), remarried fathers are ten percentage points *less* likely to make a transfer to their biological children than single divorced fathers (14% vs. 24%). Holding parental wealth, number of other siblings, and adult-child characteristics constant, we find that, on average, divorce is associated with a decrease in the probability of receiving any transfers from both single biological mothers (a 5 percentage point drop) and single biological fathers (a 3 percentage point drop). However, controlling for other factors we find that divorced single mothers are now equally likely to make a transfer as remarried mothers. In comparison, while the gap between single divorced fathers and remarried fathers shrinks somewhat (from 10 percentage points to 7 percentage points), it remains large and significant. Moreover, this change is largely attributed to a reduction in the probability that single fathers provide transfers after accounting for the characteristics of the adult child such as their age and marital status.

Figure 1: Probability of Transfer by Parent-Adult Child Relationship (1998) [about here]

Model 3 also reveals important associations between several other explanatory variables and transfers to adult children. Like Furstenberg, Hoffman & Shrestha (1995), we find that once income and other family characteristics are taken into account, transfers are no less likely from Black parental households than from White households, but the odds of transfers are significantly lower from Hispanic than from non-Hispanic households. Parents' education and financial

resources both play a major role: the odds of a transfer are almost three times higher from a college-educated parent than from a parent with less than a high school degree, and transfers increase with the parents' housing wealth, non-housing financial wealth, and prior year's income. Contrary to previous studies which find no difference by the sex of the adult child (Cooney & Uhlenberg 1992, Furstenberg et al. 1995), we find that women are significantly more likely than men to receive transfers. Transfers also decrease with children's age and are lower to married children than to unmarried children. Finally, adult siblings appear to compete with each other for resources from older parents. The degree of competition appears to be related to genetics. The number of full biological siblings has the strongest negative effect on transfers to the adult child, followed by half-biological siblings. The effect of number of stepsiblings is smallest but nonetheless significant.

The next three tables address our concerns that selection or reporting issues, discussed above, may bias the results presented in Table 2. Does the sex of the family respondent or whether he or she is a biological or stepparent influence whether he or she reports transfers to adult children? Are step-mothers systematically different from other women in ways that can account for the differences in transfers reported in Table 2? Are there other unobserved individual characteristics of parents in different relationship types that are driving these findings? Taking these questions in order, Table 3 reports the percentage of adult children receiving help by relationship to parental household and sex of family respondent. The key difference shown, within every category of family type, is that male respondents are more likely to report transfers than female respondents, in some cases by fairly large margins. Perhaps providing financial help to adult children is a household spending domain controlled or managed primarily by men, and women are less likely to be aware that children have received help. Alternatively, given the overall preference for female family respondents, the men who end up as family respondents in the HRS may be an unusually involved or generous group. Surprisingly, we find no evidence that step-parents (indicated in bold in Table 3) systematically under-report transfers. For example, in

biological mother and step-father families, we find that step-fathers report a higher probability of giving adult children financial help than do biological mothers in these households.

Table 3: Percentage of Adult Children Receiving Help by Parent-Child Relationship and Gender of Family Respondent [about here]

In Table 4, we limit our sample to blended families—those in which the adult child has at least one half-sibling or step-sibling—as reported by female family respondents. These female family respondents are, therefore, reporting on adult children who are their own biological child with their current partner (two biological parents), their own biological child but not that of their current partner (biological mother with step-father), or their current partner's biological child (biological father with step-mother). Because these are blended families, all of these women are reporting on children in more than one of these categories. Thus, differences cannot be attributed to differences in the selection of the family respondent. Consistent with our full sample in Table 1, the odds of a transfer to an adult child who is biologically related to the father but not to the mother are less than half compared to an adult child who is biologically related to both parents (OR = 0.45). Being biologically related to the mother, but not the father, also diminishes the odds that an adult child receives a transfer relative to adult children biologically related to both parents, but the negative effect of having a step-father is much less than that of a step-mother. Specifically, holding all other variables at their mean and model values in this sample, we find that the probability of receiving a transfer is 20.1% for children who are biologically related to both parents, 15.2% if the child is biologically related only to the mother, and 10.2% if the child is biologically related only to the father. These results are particularly important because they show that it is not differences across step-mothers and biological mothers that account for the findings in Table 2. Instead, the *same woman* reports that significantly higher levels of transfers are directed toward her biological children than toward her step-children.

Table 4: Effects of Parent-Child Relationship and Other Socio-Demographic Characteristics on the Odds of Adult Children Receiving Any Financial Support (Blended Families 1992-2002) [about here]

In our last set of analyses presented in Table 5, we limit our sample to family respondents who are biologically related to the adult child to avoid potential issues relating to family respondents reporting transfers to their step-children. Because we are now assured that the same family respondent is interviewed across the different waves, we can employ fixed-effects logistic regressions. Fixed-effects regression techniques can help minimize concerns of selectivity bias as a result of unobserved characteristics (because many of these unobserved characteristics presumably remain constant over time). This technique also helps to redress the selectivity bias inherent in the selection of male family respondents. In this analysis, the overall pattern of the effect of divorce and remarriage on transfers to adult children is similar to that found in Model 3 of Table 2. In particular, we find that remarried mothers tend to give more transfers to their biological children than do remarried fathers. In addition, remarried fathers give significantly less than single fathers to their biological children, whereas after controlling for parents' and children's characteristics, single mothers give less—but not significantly less—than remarried mothers. The major difference with respect to Model 3 of Table 2 is that neither remarried mothers nor single fathers are significantly less likely to give financial support to their biological children relative to parental households with two biological parents.

Table 5: Effects of Parent-Child Relationship and Other Socio-Demographic Characteristics on the Odds of Adult Children Receiving Any Financial Support (Biological Parent Respondents 1992-2002) [about here]

Discussion and Conclusions

We are all familiar with the Brothers Grimm and Disney versions of Cinderella which depicts the archetype of a "wicked step-mother." Yet it is interesting to note that in the 1817 opera of Cinderella by Gioacchino Rossini, it is a "cruel step-father" rather than a "wicked step-mother" who forbids Cinderella to attend the ball. There is consistent empirical evidence supporting both scenarios, and in general both mothers and fathers tend to favor their biological children over their step-children. Our findings indicate that the more commercially popular interpretation of this tale, however, is more common, but the full implications of these findings are important to consider. While it appears that women discriminate more strongly against their step-children, conversely, they also favor and support their biological children. Furthermore, while men are sometimes accused of "abandoning" their biological children from a previous relationship, they provide greater support for step-children. In the absence of any agreed upon norms about appropriate levels of support and obligation between step-parents and step-children, it is difficult to assign labels "wicked" and "cruel" to their different behaviors. Instead, it appears as if both mothers and fathers are acting broadly in accordance with what would be expected from both socio-evolutionary and exchange theories.

In particular, with respect to socio-evolutionary theory, we find that men's behaviors are consistent with a "mating strategy," while women are more likely to follow a "parental investment strategy." Our findings suggest that men's "mating strategy" (i.e. supporting a woman's previous biological children in the hopes of having more children together with her) may create a set of expectations and behaviors that continue—even after the woman is no longer of reproductive age. Consistent with Andersen et al. (2001), we find that while step-fathers may to some extent compete for mothers' attention and resources, compared to children with single divorced mothers, step-fathers appear to augment the amount of money mothers give to their biological children. Much less is known about step-mothers' willingness to support the biological

children of their husbands. It appears, however, that women's dominant parental investment strategy provides relatively little motivation for investing in step-children either at young or at older ages. Our results on blended families are highly complementary to the findings by Case et al. (2001) with respect to step-mothers' treatment toward younger step-children living at home. Step-mothers with both adult biological and adult step-children report being only half as likely to give to their step-children as to their and their current husbands' biological children. Even if step-mothers were simply unaware of transfers to their step-children, it would nonetheless be a meaningful finding that they believe and willingly report such large inequalities.

Considerable research drawing on theories of exchange finds that mothers' stronger ties to their adult biological children facilitate far greater upward transmissions of emotional support and contact with mothers than with fathers. Our findings on downward transmission of financial resources to adult children are also entirely consistent with the notion of intergenerational solidarity. Kalmijn (2007) further argues that women in their role as "kinkeepers" play a central role in moderating men's interactions with both their biological and step-children. Building on this idea, we find that women may not only influence upward transfers, but also to direct downward cash flows.

Implications

If there has been a "matrilineal shift" in intergenerational transfers of money, a) what is the magnitude of these shifts, b) is this tilt likely to become steeper in the future, and c) what are the implications for intergenerational transmission of inequality?

In general, we find that single divorced fathers are more likely to make transfers than single divorced mothers, while remarried fathers give much less than remarried mothers. To examine the overall magnitude of these differences on intergenerational transfers, it is important to take into account the different distributions of men and women in different marital states. In particular, men are more likely to remarry than women and as a result there are fewer single

fathers than single mothers. Using a sample of ever-married individuals with children from the 1992 HRS cohort, we find that following a divorce 76.9% of fathers are currently remarried compared to 62.5% of mothers. 23.1% of ever-divorced fathers are currently single, while 37.5% of ever-divorced mothers are single. Combining these numbers with our estimated probabilities of giving a financial transfer (see Figure 1, Model 1), we can make a "back of the envelope calculation" about the expected probabilities that money flows along fathers' or mothers' biological lines following divorce. We estimate that overall 21.4% of ever-divorced mothers gave a financial transfer to their biological children over the last two years, while only 16.4% of ever-divorced fathers made similar transfers. These estimates reflect the differences in the probability of transfers without adjusting for differences in mothers' and fathers' ability to provide assistance.

Over the long term, it is unclear whether the "matrilineal tilt" is likely to get stronger or weaker over time as norms about step-parent and step-child obligations and relationships become more established. On the one hand, by taking a more active role in their young children's lives, fathers may establish closer and stronger ties that last into their children's adulthood, thereby potentially reducing the matrilineal tilt. On the other hand, over recent decades women have become more likely to participate in the labor force and exert greater influence over household financial resources. Thus, we would expect that the financial resources available to the next cohort of single divorced mothers would be closer to those of single divorced fathers. In our analyses, when we hold the financial resources constant, we find that the gap between the probability that single fathers make transfers relative to single mothers falls from 7 percentage points to about 2 percentage points.

Finally, if the matrilineal tilt is a consequence of divorce and remarriage, then we would expect a stronger tilt among populations with relatively high rates of divorce and remarriage. In the United States, approximately 70% of marriages among African-Americans are expected to end in divorce within 30 years of marriage, compared to 47% of marriages among Whites (Raley

& Bumpass 2003). In addition, only 49% of non-Hispanic Black women will remarry within 10 years of divorcing, compared to 79% of non-Hispanic White women (Bramlett & Mosher 2002). More generally, among all racial and ethnic groups, divorce is higher at lower levels of socioeconomic status. Overall, children with divorced parents receive less money from both their biological mothers and fathers than children without divorced parents. Moreover, if their biological mothers do not remarry, they are unlikely to receive any compensating increase in the amount of support they receive. As a result, adult children in population subgroups exhibiting high divorce and low remarriage are likely to lose some financial support from their biological fathers without receiving a boost in support from a new step-father. Thus, our current pattern of highly gendered intergenerational wealth flows may further exacerbate the transmission of intergenerational inequality.

The full implications of these findings are difficult to estimate given some of our data limitations. Specifically, our data are limited to *in vivo* transfers of as little as $500. While such transfers are important, in order to fully measure the extent of the "matrilineal tilt," future research on the magnitude of inheritance from divorced and remarried biological mothers and fathers would be particularly interesting. Moreover, while researchers have begun to pay more attention to divorced fathers, we are still lacking a representative and full picture of the relationships between divorced fathers and their adult biological children rendering predictions about future trends difficult. Nonetheless, our findings draw attention to a relatively unnoticed, but potentially important, trend: the change in intergenerational wealth flows along biological gender lines. While additional studies are needed both to confirm our findings and to estimate the extent of these wealth flows through men and women, these initial findings are provocative and warrant further investigation.

Endnotes

[1] The HRS, however, did not distinguish between biological and adopted children. Therefore, some of the children we refer to as biological children may actually have been adopted.

[2] The precise definition of blended families used by researchers varies by study (see Juby, Heather, Celine Le Bourdais, and Nicole Marcil-Gratton. 2005. "Sharing roles, sharing custody? Couples' characteristics and children's living arrangements at separation." *Journal of Marriage and Family* 67:157-172.)

[3] Similar analyses of male respondents reporting both biological and step-children were not conducted because the sample size was too small and potentially biased (see below).

[4] Our sample consists of the adult children of HRS respondents, rather than respondents themselves. As a result, large families are over-represented relative to their actual representation in the HRS parent sample.

[5] In addition to asking about spouses, the HRS also asked about partners residing in the household. Family respondents were asked to identify whether a given adult child was a stepchild *or the child of his or her partner*. Thus, cohabiting-step relationships are included in our analyses.

[6] In 1992, the question asked whether parents had made any transfers in the past year. Consequently, the percentage of households who have transfers is lower in 1992 than in any other year.

[7] All estimates are for White, non-Hispanic parents aged 57.8 with high school diplomas earning average incomes and holding average levels of assets. Adult children's characteristics are fixed to married males age 33.1, who have two full siblings.

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Table 1: Descriptive Statistics on Financial Transfers and Parental and Adult Child Characteristics for Three Different Samples, Pooled Data 1992-2002

	Full Sample	Blended Families	Biological Respondents
	(N = 80,007[a])	(N = 13,377[b])	(N = 69,791[c])
Dependent Variables			
Adult child received help >$500 %	18.1	14.7	19.1
Independent Variables			
Parent-Child Relationship (%)			
Two biological parents	63.9	48.2	73.3
Biological mother with step-father	4.1	7.0	4.3
Biological father with step-mother	13.0	44.8	0.7
Biological single mother	13.7	na	15.8
Biological single father	5.3	na	6.0
Parent's Characteristics			
Age	57.8	55.6	58.3
Race %			
White	78.3	77.2	78.1
Black	17.7	19.4	17.8
Other	4.0	3.4	4.1
Hispanic %	11.5	9.1	12.2
Education %			
Less than high school	32.5	30.7	33.6
High school diploma	37.4	36.9	37.5
Some college	18.1	21.0	17.4
College and above	12.0	11.3	11.5
Total housing assets	$73,439	$65,091	$74,179
Total financial assets	$62,563	$61,931	$61,601
Total income	$48,342	$53,744	$46,696
Sibling Composition of Adult Child			
Number of biological siblings	3.0	2.4	3.0
Number of step-siblings	.2	.2	.1
Number of half-siblings	.4	2.5	.3
Adult Child's Characteristics			
Child is Female %	49.2	49.0	49.2
Child's Age	33.1	33.5	32.9
Child is Married %	55.7	52.9	55.8

[a] Number of individual adult children = 22,517

[b] Number of individual adult children = 5,131

[c] Number of individual adult children = 19,536

Table 2: Odds Ratios from Logistic Regressions of Receipt of Financial Support on Parent-Child Relationship and Other Socio-Demographic Characteristics (Pooled Cross-Section 1992-2002, N = 80,007).

	Model 1		Model 2		Model 3	
	O.R.	Sig.	O.R.	Sig.	O.R.	Sig.
Parent-Child Relationship (two bio = ref)						
Biological mother with step-father	0.79	*a,b	0.75	**a	0.74	**a
Biological father with step-mother	0.49	***c	0.34	***c	0.50	***c
Biological single mother	0.61	***d	0.76	***d	0.76	***
Biological single father	0.89		1.03		0.83	*
Parent's Characteristics						
Parent's Age			0.94	***	1.00	
Race (White = reference)						
Black			1.04		0.96	
Other			1.18		1.06	
Hispanic (non-Hispanic = reference)			0.84	*	0.70	***
Education (less than H.S. = reference)						
High School diploma			1.54	***	1.45	***
Some college			2.13	***	1.87	***
College and above			3.49	***	2.72	***
Total housing assets (logged)			1.01	**	1.02	**
Total financial assets (logged)			1.04	***	1.05	***
Total income (logged)			1.06	***	1.05	***
Sibling Composition of Adult Child						
Number of biological Siblings			0.78	***	0.78	***
Number of step-siblings			0.96		0.94	*
Number of half-siblings			0.85	***	0.84	***
Adult Child's Characteristics						
Female (Male = reference)					1.10	**
Child's Age					0.93	***
Married (Not married = reference)					0.61	***
Year Indicators (1992 = reference)						
1994	1.06	*	1.30	***	1.34	***
1996	1.59	***	1.90	***	2.06	***
1998	1.10	*	1.46	***	1.63	***
2000	1.00		1.42	***	1.65	***
2002	0.88	**	1.35	***	1.61	***
Pseudo R^2	0.01		0.11		0.15	

+=p<0.10 *=p<0.05 **=p<0.01 ***=p<-.001

a = difference between biological mother/step-father & biological father/step-mother significant at p<.05

b = difference between biological mother/step-father & biological single mothers significant at p<.05

c = difference between biological father/step-mother & biological single father significant at p<.05

d = difference between biological single mother & biological single father significant at p<.05

Table 3: Percentage of Adult Children Receiving Help by Parent-Child Relationship and Gender of Family Respondent.

	Female Resp.	Male Resp	Sig.
Two biological parents	20.7 *(50,358)*	24.2 *(764)*	*
Biological mother & step-father	16.6 *(2,968)*	**21.6** ***(342)***	*
Biological father & step-mother	**11.1** ***(9,883)***	18.1 *(492)*	***
Single biological parent	12.5 *(10,990)*	19.1 *(4,210)*	***

*=p<0.05 **=p<0.01 ***=p<-.001

Note: Numbers in bold indicate reported by step-parent

Significance tests for gender differences within each family type.

Table 4: Odds Ratios from Logistic Regression of Receipt of Financial Support on Parent-Child Relationship and Other Socio-Demographic Characteristics (Blended Families 1992-2002).

		(N=13,377)	
Parent-Child Relationship			
Two biological parents (reference)	--		
Biological mom with step-father	0.71	*	a
Biological dad with step-mother	0.45	***	
Parent's Characteristics			
Parent's Age	1.02	+	
Race (White = reference)			
Black	0.72	*	
Other	0.84		
Hispanic (non-Hispanic = reference)	0.61	*	
Education (Less than High School = reference)			
High school diploma	1.45	*	
Some college	1.87	***	
College and above	3.65	***	
Total housing assets (logged)	1.01		
Total financial assets (logged)	1.03	*	
Total income (logged)	1.06	+	
Sibling Composition of Adult Child			
Number of biological siblings	0.83	***	
Number of step-siblings	1.03		
Number of half-siblings	0.87	***	
Adult Child's Characteristics			
Female (Male = reference)	1.05		
Child's age	0.91	***	
Married (Not Married = reference)	0.70	***	
Year Indicators (1992 = reference)			
1994	1.39	**	
1996	2.08	***	
1998	1.99	***	
2000	1.54	**	
2002	1.76	***	
Pseudo R^2	0.17		

+=p<0.10; *=p<0.05; **=p<0.01; ***=p<-.001

a = difference between biological mother/step-father and biological father/step-mother households significant at p<.05

Table 5: Odds Ratios from Fixed Effects Logistic Regression of Receipt of Financial Support on Parent-Child Relationship and Other Socio-Demographic Characteristics (Biological Parent Respondents 1992-2002).

	(N = 24,282[e])		
	O.R.	Sig.	
Parent-Child Relationship			
Two biological parents (reference)	--		
Biological mother with step-father	0.89		a
Biological father with step-mother	0.29	**	c
Biological single mother	0.65	**	
Biological single father	0.89		
Parent's Characteristics			
Total housing assets (logged)	0.99		
Total financial assets (logged)	1.01	*	
Total income (logged)	1.03	***	
Sibling Composition of Adult Child			
Number of biological siblings	0.83	***	
Number of step-siblings	0.87	**	
Number of half-siblings	0.87	**	
Adult Child's Characteristics			
Child's marital status			
Not married (reference)			
Married	0.65	***	
LR Chi-2	162.17	***	

+=p<0.10; *=p<0.05; **=p<0.01; ***=p<-.001

a = difference between bio. mother/step-father & bio. father/step-mother households significant at p<.05

b = difference between bio. mother/step-father and bio. single mothers households significant at p<.05

c = difference between bio. father/step-mother and bio.l single father households significant at p<.05

d = difference between bio. single mother and bio. single father households significant at p<.05

[e] 24,282 observations on 5,480 individuals

Figure 1: Probability of Transfer by Parent-Adult Child Relationship (1998)