Marital Disruption, Step Children, and Transfers to the Elderly

Liliana E. Pezzin
Robert A. Pollak
Barbara Steinberg Schone

June, 2005

Contact information: Liliana E. Pezzin, Medical College of Wisconsin; Milwaukee, WI 53226, phone: (414) 456-8862, lpezzin@mcw.edu; Robert A. Pollak, Department of Economics, Washington University, St. Louis, MO, 63130-4899, phone:(314) 935-4918, pollak@wustl.edu; Barbara Steinberg Schone, Center for Financing, Access and Cost Trends, Agency for Healthcare Research and Quality; Rockville, MD, 20850, phone: (301):427-1661, bschone@ahrq.gov .

Acknowledgments: We thank Susan Tian and Marjorie Odle for assistance with the analysis file. The views expressed in the paper are those of the authors. No official endorsement by the Agency for Healthcare Research and Quality or the Department of Health and Human Services is intended or should be inferred.

INTRODUCTION

Divorce has become an important part of life for many in Europe and North America. For the United States, it has been estimated that approximately one half of all marriages will end in divorce (Kreider and Fields 2002, Martin and Bumpass 1989). Overall, 45 percent of children are predicted to experience the break up of their parents' marriage by the age of 18 (Bumpass and Rindfuss 1979). One-third of all children will eventually live with a step parent before they reach adulthood (Glick 1989; Furstenberg and Cherlin 1991) and approximately 52 percent of children lived with both parents in 1998 compared to 73 percent in 1972 (Smith 1999). As a consequence of the increasing incidence of divorce and nonmarital childbirth, and subsequent (re)marriage, the traditional nuclear family — husband, wife and their joint children — is rapidly being replaced by new, more complex family structures. Conventional wisdom teaches that living in nontraditional families has profound negative effects on adults and children.

Given its more immediate impact, it is not surprising that a substantial literature within the social sciences has focused on the effects of nontraditional family structures on *children* (Cherlin et al. 1991; Duncan and Hoffman 1985; Furstenberg and Cherlin 1991; Furstenberg *et al.* 1983; McLanahan and Sandefur 1994; Haveman and Wolfe 1995; Morrison and Cherlin 1995; Seltzer and Bianchi 1998; Painter and Levine 2000; Ginther and Pollak 2004). A smaller literature has focused on the positive effects of marriage and negative effects of divorce on adult men and adult women (Waite 1995, Waite and Gallagher 2000). Relatively little is known, however, about the effects of nontraditional family structures on adult children's transfers to their disabled elderly parents.

One particularly policy-relevant aspect of intergenerational relations that may be adversely affected by family disruption is care of elderly parents. Intergenerational transfers are a prominent feature of the economic landscape with intra- and inter-household transfers often used to fulfill families' insurance roles: For the disabled elderly, informal caregiving by children (i.e., the provision of services on a nonpaid basis) and intergenerational coresidence represent critical modes of assistance (McGarry and Schoeni 1997). Recent evidence suggests that adult children's involvement in parental care has declined over the past several decades (Kotlikoff and Morris 1990; Spillman and Pezzin 2000). Dramatic changes in family structure since the 1970s – the relative decline of the traditional nuclear family in the face of rising rates of divorce, nonmarital fertility and (re)marriage – may be a factor in the decline in family caregiving.

Concerns about the growing elderly population and the potential erosion of family support have prompted researchers to begin examining the long-term effects of marital disruption. To a large extent, research has focused on the effects of marital disruption by examining the role of divorce and remarriage on the extent and quality of intergenerational relations (Altonji, Hayashi and Kotlikoff 1996; Aquilino 1994; Cooney and Uhlenberg 1990; Eggebeen 1992; Furstenberg, Hoffman and Shrestha 1995; Lye *et al.* 1995; Pezzin and Schone 1999). The general consensus is that divorce reduces family support and the quality of relations between adult children and their parents. Although the impact of divorce on bonds between adult children and their parents is stronger for fathers than for mothers (Furstenberg, Hoffman and Shrestha 1995), the quality of relations between divorced women and their children is generally lower than that between mothers and children in traditional nuclear families (Johnson 1989). Research also suggests that remarriage further weakens the bond between generations (Cooney and Uhlenberg 1990; White 1994; Pezzin and Schone 1999).

Researchers have recently turned their attention to the effects of marital disruption on transfers to elderly parents. Evidence is beginning to accumulate which suggests that elderly parents in families that include at least one step child receive lower levels of transfers from their children than parents in families composed solely of biological children. (Pezzin and Schone 1999; Pezzin and Schone 2001).

This study investigates the effects of divorce, remarriage and step children on intergenerational living arrangements and adult children's time and cash transfers to their disabled elderly parents. Our analysis differs from previous research in two important respects: First, our focus is on the network of *adult children* of disabled elderly parents. Because caregiving decisions are inherently family decisions, the entire of network of adult children is the appropriate unit of analysis. By examining transfers from the perspective of the adult children, we hope to understand why parents who divorce, remarry, or have step children instead of or in addition to biological children might receive less support . A critical issue that our analysis will address is whether the presence of step children affects the transfers a biological child makes to a disabled parent. Second, unlike previous research, which uses married parents as the reference group, we investigate the effects of divorce, remarriage and step children on transfers from adult children to their *unpartnered* elderly parents. The presence of a spouse or partner generally diminishes the caregiving role of children and weakens their incentives to provide assistance. Hence, the unpartnered elderly (that is, those who are divorced, separated or widowed) are a group of particular policy interest because they are far more likely to be institutionalized (Freedman 1996) and are also more likely to receive assistance from or coreside with their children than are their married counterparts (Dwyer and Coward 1991). By focusing on children of unpartnered elderly parents, we are able to estimate the effects of divorce, remarriage and step children for a group of elderly individuals who are likely to have similar needs for assistance.

Family Structure, Family Type and Transfers to Elderly Parents

Economics and sociology offer a number of theories that explain why divorce, remarriage and step children might affect transfers from adult children to elderly parents. Divorce disrupts, among other things, the resources devoted to marriage-specific public goods such as children (Duncan and Hoffman 1985). As with most privately provided public goods, children's physical and human capital will be underprovided when divorce occurs (Weiss and Willis 1985). Accordingly, it seems likely that ties between generations will be weakened when parents divorce, especially the ties between children and non-custodial parents. Resource flows are also likely to be further disrupted when parents remarry. Remarriage creates economic and social ties across households, but Cherlin (1978) characterizes the blended family created by remarriage as an "incompletely institution." Membership in blended families is more fluid than is typical within traditional nuclear families and family roles are far less clearly specified (Furstenberg 1987).[1] The increased complexity in family structure and household organization also increases the transaction and bargaining costs involved in exchanges across households. Because the discontinuities and complexities brought about by parental marital disruption may interrupt the

[1] Although step children and blended families are not new, the process that has created such families has changed substantially over time (Biblarz and Raftery, 1999). Historically, blended families arose primarily as the result of remarriage following widowhood. Increasingly, the predominant mode by which blended families are formed is through remarriage following divorce and, more recently, through subsequent marriage of women who had a nonmarital birth to someone other than the child's biological father. Because of data limitations, we do not distinguish step relationships by the process that generated them, although all three possibilities are represented in our data.

relationship between parent(s) and young child(ren), they may impact negatively on economic exchange later in life.

We introduce the term "family type" to denote the composition of the elderly parent's network of adult children and to distinguish it from the familiar notions of family structure, which are prominent in discussions of outcomes for children.[2] Our definition of family type characterizes the index child's family according to the presence or absence of other biological or step children of the parent. We distinguish among three family types for this network: all children of the parent excluding the index child are biological children (denoted allbio [-i]); all children of the parent excluding the index child are step children (allstep [-i]); and the children of the parent excluding the index child are both biological and step children (biostep [-i]). For example, suppose the parent's network consists of two biological children and one step child. If the index child is one of the biological children, then the remaining network is biostep[-i]; if the index child is the step child, then the remaining network is allbio [-i]. The family-type of the reduced network is crucial because the transfer behavior of the index child may depend on whether the other children in the network are biological children or step children of the elderly parent.

---

[2] Ginther and Pollak (2004) distinguish between "child based" and "family based" classification schemes. A child-based classification scheme categorizes an index child's family as a "stepfamily" or a "two-biological-parent family" on the basis of the index child's relationship to the parents. With a child-based classification scheme, the same blended family could be a step family for one child and a two-biological parent family for another. With a family-based classification scheme, step children and joint children who live together are said to belong to a blended family. Our data do not enable us to classify families using either the child based or the family based notion of family structure.

DATA AND METHODS

Data for this analysis are drawn from matched observations from waves one and two of the Assets and Health Dynamics of the Elderly (AHEAD) survey. The AHEAD survey is an ongoing stratified panel survey that began with a nationally-representative sample of community-based persons aged 70 and older in 1993 from the United States. Respondents are followed longitudinally roughly every two years. A total of 8223 respondents, corresponding to 6052 households, were interviewed in wave one of AHEAD (AHEAD1). Data from wave two of AHEAD (AHEAD2), which occurred in 1995, include re-interviews of 6,948 elderly persons.[3] Unlike other datasets used in the field, information on amounts and sources of care in AHEAD2 is available regardless of the respondent's disability level or whether the respondent coresides with or receives care from an adult child. In addition, because the AHEAD2 sample includes nursing home residents as well as community residents, we are able to examine the effects of divorce, remarriage and step children not only on transfers of time and money but also on living and care arrangements.

For the purpose of our analysis, we limited our sample to AHEAD2 respondents who reported in wave two their marital status as widowed or as divorced/separated (AHEAD did not distinguish between divorce and separated), who reported at least one child, and who reported

---

[3] Attrition due to death and interview non-response accounted for 9.6 percent and 5.8 percent, respectively, of sample size loss between waves one and two of AHEAD.

having difficulty with at least one basic or instrumental activity of daily living.[4,5] Since the unit of analysis in our study is the adult child, we exploited the sibling structure of the AHEAD data and formed individual records for each child associated with the 1593 elderly parents meeting the above inclusion criteria. Our final sample consists of 4863 adult children: 354 of them are the only child of an unpartnered disabled parent and 4509 are children with one or more siblings of 1239 elderly parents.

Variable Definitions

The dependent variables we examine in this study are intergenerational living arrangements and cash and time transfers provided by adult children to their elderly parents. We represent living arrangements with a five-level categorical variable indicating whether the parent lives (i) with the index child i; (ii) with another child; (iii) with other relatives or non-relatives; (iv) in a nursing home or (v) alone (reference category). A child was coded as providing time transfers to the parent if the elderly respondent identified that child as providing assistance with one or more ADLs or IADLs in the past four weeks; zero otherwise. Finally, our measure of cash

---

[4]We refer to these respondents as disabled elderly parents. Basic activities of daily living (ADLs) are transferring, dressing, bathing, toileting, eating, and walking across a room. Instrumental activities of daily living (IADLs) are grocery shopping, preparing meals, taking medications, using a telephone, and managing household finances.

[5] We are restricting our attention to a subsample of the unpartnered disabled elderly. We exclude those parents without children and those parents who were never married. For the AHEAD cohort — individuals who were 70 and older in 1993 — nonmarital fertility was uncommon, and children born out of wedlock were often placed for adoption (and may be underreported). Since there are so few never married elderly parents with children, we have dropped them from our analysis and confined our attention to divorce and widowhood (if a woman who gave birth out of wedlock subsequently married someone other than the child's biological father, then the family would appear in our sample).

transfers was based on the elderly parent's report that a child provided financial assistance greater than $500 to the parent in the past two years.

Of primary interest for our analysis are variables that represent family type and how the index child is related to the parent (bio child or step child). For each child in our sample, we incorporate four indicator variables to capture these concepts. In addition to a variable reflecting whether the index child is a biological or step child, we include an indicator that identifies a child whose parent has additional step children and another indicator that identifies a child whose parent has additional biological children. Finally, we include an interaction term between the index child's relationship to the parent and the presence of step children in the sibling network; we do this to identify potentially differential effects for biological children whose parents report having at least one step child relative to biological children whose parents report having no step children.

All of our models include a rich set of control variables to capture variation across adult children and their elderly parents along a number of dimensions: demographic and economic characteristics of the parent; parental health and functioning; and demographic and economic characteristics of the index child and the child's sibling network. In addition to basic demographic characteristics (age, race, gender, and education), we include two variables to measure parental marital history: the parent's current marital status (currently divorced; reference category is currently widowed) and an indicator of whether the parent has experienced at least one remarriage. Parental economic status is incorporated into the analysis by two constructs: current, nonbequeathable income (the sum of Social Security and pension income) and bequeathable wealth, (the parent's total net worth). Parental health is captured by the inclusion of two indicators based on severity of disability (parents with 1or 2 ADLs, 3 or more ADLs, both relative to parents who are limited on IADLs only). Finally, the economic status of children is represented by two indicator variables that reflect the economic well-being of children relative to the parent: (i) whether the index child is financially worse off than the parent respondent and (ii) whether all siblings of the index child are worse off than the parent respondent.[6] Appendix Table 1 contains a complete list of variable definitions and summary information for our sample.

Empirical Strategy

Our empirical goal is twofold. First, we are interested in examining whether parental marital disruption, child-parent kin relationship, and family type affect the likelihood that an adult child makes time and cash transfers to a disabled elderly parent. Second, we wish to investigate the extent to which these variables influence the living arrangements of adult children and their elderly parents.

Since the nature of transfer behavior of children without siblings is likely to differ from that of children with siblings, we stratify our sample by the presence of siblings (only children versus multiple-children families) and estimate separate models. We use a bivariate probit specification to model jointly the probabilities that an adult child provides time (C_{ij}) and/or cash transfers (T_{ij}) to a parent. Specifically, for every child *i* in family *j*, we estimate transfer equations of the form:

---

[6] AHEAD collects information from the respondent on children's financial status relative to the parent respondent but does not collect any additional information about the income and wealth of the children.

$$
\begin{aligned}
C_{ij}^* &= X_{ij}\alpha + Z_{ij}\beta + \ + Y_j\delta + \zeta_{ij} \\
C_{ij} &= 1 \ \ if \ C_{ij}^* \geq 0 \\
C_{ij} &= 0 \ \ if \ C_{ij}^* < 0 \\
T_{ij}^* &= X_{ij}\alpha' + Z_{ij}\beta' + Y_j\delta' + \xi_{ij} \\
T_{ij} &= 1 \ \ if \, T_i^* \geq 0 \\
T_i &= 0 \ \ if \, T_i^* < 0. \\
(\zeta_{ij}, \xi_{ij}) &\sim N(0,1,\rho)
\end{aligned}
\tag{1}
$$

where X_{ij} is a child-parent specific variable capturing the nature of their relationship (biological versus step); Z_{ij} is a vector of child-specific variables assumed to affect the adult child's supply of transfers, including family size and type; and Y_j is a vector of parent-specific variables (invariant within a family) capturing demographic, economic and health status factors assumed to affect the parent's demand for transfers (parental race, marital status, marital history and disability level). We estimate the coefficients of the model—α, β, δ, α', β' and δ'— along with the correlation coefficient ρ.

Elderly respondents in our sample are observed in one of five distinct living arrangements (with the index child; with another child; with other relatives or non-relatives; in a nursing home or alone).[7] To estimate living arrangements, we use a multinomial logit specification. Formally, we assume that the value of living arrangement *k* for the i^{th} child in family *j* is given by:

$$L_{ijk}^* = X_{ij}\alpha_k'' + Z_{ij}\beta_k'' + Y_j\delta_k'' + \varepsilon_{ijk} \qquad k=1,...,5, \tag{2}$$

---

[7] Clearly, parents of only children do not have the option of living with a child other than the index child. Thus, the choice set for this group contains four possible alternatives.

where *X, Y* and *Z* are defined as above and α'', β'' and δ'' are the coefficients to be estimated. The optimal living arrangement is that which exhibits the highest latent value, $L_{ijk} = 1$ if

$L^*_{ijk} > L^*_{ijm};\ \forall m \neq k; L_{ijk} = 0$ otherwise.

Estimates of the bivariate probit transfer equations and the multinomial logit living arrangements are obtained via maximum likelihood. Because our data includes observations on more than one child in multiple sibling families, we adjust the standard errors of our estimates to reflect the inherent correlation across observations.

EMPIRICAL RESULTS

Table 1 presents summary information on cash and time transfers, as well as living arrangements, for all children in our sample. The first panel provides information on children's transfers by parental marital status and marital history. The next two panels focus on children's transfers by their relationship to the parent, separately for only children and children who have siblings. The last panel shows children's transfers by family type (among children with siblings).[8]

The bivariate associations suggest that children are significantly less likely to provide care to their disabled parent if the parent is divorced (relative to care they would provide to a

---

[8]Relationships in our data are based on parent-child dyad information; we are, therefore, unable to infer directly relationships *among* siblings. For example, two siblings who are both step children of the parent need not be biologically related, although given the age of the AHEAD sample, they are likely to be. Furthermore, two siblings who are both biological children of the same parent need not be full siblings, although they are likely to be.

widowed parent). A child is also less likely to coreside with a divorced parent, and a divorced parent is more likely to live alone or in a nursing home. The relationship between transfers, living arrangements and remarriage appears more modest: children with parents who experienced a remarriage are less likely to provide cash transfers and more likely to have a parent who is in a nursing home.

Data from panels 2 and 3 indicate that transfers from only children are substantially higher than individual transfers by children who have siblings. Biological children who are the only child, for example, are more than twice as likely to provide time transfers to their parents as biological children who have siblings (36.5 percent vs. 14.6 percent, respectively). Parents with only children and those with multiple children exhibit remarkably similar receipt of cash and time transfers overall.[9]

In addition to the presence of siblings, our bivariate comparisons suggest considerable variation in transfers by the type of relationship (biological versus step) of the parent and child. The likelihood of cash as well as time transfers from biological children, for example, is about four-times that of step children: this pattern holds for both only children and children who have siblings. Consistently, results for living arrangements indicate that step children are significantly less likely to coreside with the parent and more likely to have a parent living in a nursing home than biological children (1.6 percent versus 7.3 percent and 10.2 percent versus 7.3 percent, respectively).

The bottom panel of Table 1 provides further information about children from multiple-

[9] The likelihood of a parent receiving a cash (time) transfer from a child was 16.4 (47.2) percent for parents with only children and 17.4 (46.2) for parents with multiple children.

child families. Differentiating children by family type, we find that children in families without step children are more likely to provide cash and time transfers than children in families with step children. Similarly, children in families with step children are less likely to coreside with the parent. These findings raise the possibility that a child's transfer behavior depends not only the relationship to the parent (i.e., biological or step) but also on the composition of the sibling network. To investigate and isolate these effects, we rely on our multivariate analyses which are discussed below.

Table 2 presents estimated coefficients from the bivariate probit model of cash and time transfers and relative risk ratios from the multinomial logit model of living arrangements for the group of 354 adult children who are the only child of a disabled elderly parent. Findings from these multivariate analyses are consistent with the univariate results discussed above, and indicate that the general pattern of lower transfers from step children and children of divorced parents persists despite the inclusion of a wide array of controls. Specifically, the results indicate that step children are significantly less likely to provide cash or time transfers to their elderly parents; they are also less likely to coreside with a parent (relative to the parent living alone). Similarly, children of divorced parents are significantly less likely to coreside with their disabled elderly parent.

Table 3 provides analogous estimates for children who have siblings. We find strong negative effects of being a step child on the provision of cash and time transfers, as well as in the probability of shared living. The estimates also suggest a detrimental effect of parental divorce on time transfers and on the probability of coresidence with the index child. Children of divorced parents are about half as likely as children of widowed parents to coreside with a parent.

We now turn to family type. Results from the time transfer estimation indicate that the presence of biological children in the index child's sibling network lowers the propensity to provide time— a result consistent with the notion that biological children "crowd out" the efforts of siblings. The presence of siblings who are step children, on the other hand, has no statistically significant effect on time transfers by the index child. Step children are about one-eighth as likely as biological children to coreside with a parent. Biological children in families with step children are significantly less likely to have a parent living with *another* child. In contrast, children whose parents have only biological children are over four times more likely to have a parent coreside with another child.

Given the inherent difficulty in interpreting the underlying coefficients from the bivariate probit and multinomial logit models, particularly for interacted constructs, we calculate predicted probabilities of all outcomes for alternative child-parent relationship/family type combinations. These simulated probabilities, shown in Table 4, are computed by setting the relevant relationship and family type variables to new values while holding all other variables constant at their original levels. Predicted probabilities are calculated for each child in the sample and then averaged across the relevant sample (of only children and children with siblings, respectively).[10] Differences in the predicted probabilities across alternative relationship/family type groups can be interpreted as marginal effects of the variables of interest on the outcomes.

With regard to only children, the predicted probabilities indicate that the incremental

---

[10] The simulations for children with siblings are averaged over the subset of observations where the index child has at least two siblings since the outcome of having siblings that are both biological and step children of the parent implies that there were at least two siblings (category C and F in the last panel of Table 4).

effect of being a step child relative to a biological child is substantial. Predicted cash and time transfers are virtually identical to actual levels shown in Table 1, indicating that the overall differences observed do not appear to be driven by other differences between step and biological children in one-child families. The simulations also show that the much lower probability of an only step child living with a parent relative to an only biological child results in larger proportions of elderly individuals with an only step child living alone compared to those having an only biological child (76.8 percent versus 65.7 percent) and an increased probability of being in a nursing home (13.3 percent versus 10.3 percent).

Turning our attention to children who have siblings, we find that being a step child results in substantially lower levels of time and cash transfers provided. Although there is relatively little difference in cash and time propensities among step children by sibling network characteristics (Rows D, E, and F of Table 4), the results reveal a higher likelihood of providing time transfers among biological children whose sibling network is composed solely of step children of the parent (Row B) relative to biological children whose sibling network is composed of both biological and step children of the parent (Row C). This finding is consistent with the notion that biological children may attempt to compensate for the (anticipated) lower involvement of siblings who are step children of the parent. The presence of other biological children, on the other hand, mediates this process by providing additional "viable" candidates to share in that responsibility (i.e., other biological children may take on some of the cash and time transfer responsibility). Our results are also consistent with the notion that biological children are able to free ride on the care provided by other biological children but not on the care (or lack thereof) provided by step children.

The predictions also indicate that the addition of other biological children to a family with step children has a strong effect on living arrangements of biological children (Rows B and C of Table 4). The likelihood that the index biological child has a parent who lives with another child quadruples from 3.6 percent to 14.1 percent. This increase is accompanied by a sizeable decrease in the probability that the parent lives with the index child (12.2. percent to 7.0 percent) or with another relative or non-relative (14.2 percent to 8.4 percent) and a somewhat smaller decrease in the likelihood that the parent lives alone (65.0 percent to 63.2 percent).

In addition to the effects of child-parent relationship, family type, and parental marital history, our results suggest that children's decisions to provide financial or time transfers to their elderly parents are driven by a number of other factors. For both groups of only children and children with siblings, we observe strong effects of parent's disability status (as measured by ADLs) and parent's age on time transfers, a result likely capturing the child's response to the parent's demand for care. Cash transfers, on the other hand, do not appear sensitive to these or other parent-specific demographic and health variables. Instead, we find children's cash transfers depend primarily on the parent's wealth, as measured by his net worth, and the child's relative financial status. Finally, our finding of a positive, albeit modest, correlation between the cash and time transfer equations may suggest that children in our sample do not view financial transfers as substitutes for time transfers. Alternatively, the positive correlation between cash and time assistance may reflect unobservable characteristics, such as the child's "giving disposition" or the parent's unobservable need.

Lastly, results regarding parent and child living arrangements are generally consistent with expectations. Parental characteristics, such as disability level and race/ethnicity, affect living arrangements, as do competing demands on the child's time (marital status and the presence of children), the child's economic status, and the number of siblings in the index child's sibling network.

CONCLUSION

Aside from the growth in the elderly population, one of the most marked demographic trends of the twentieth century was the tremendous increase in divorce and remarriage. These trends have precipitated dramatic changes in family structure, a development that has captured the attention of researchers and policymakers concerned with the well-being of children. Relatively little research, however, has explored the effects of these demographic trends on transfers by adult children to their elderly parents.

In this paper, we examine the effects of divorce and remarriage on adult children's transfers of time and cash to disabled elderly parents as well as on the living arrangements of disabled elderly parents. In general, the results presented here support the notion that family disruption, broadly conceived, has a negative impact on child-to-parent transfers. Our finding of a detrimental effect of parental divorce on children's transfers is consistent with the literature and suggests a growing number of elderly persons who will be particularly vulnerable in later life due to weaker ties to their children.

We also examine the independent effects of family type. We find strong evidence that step children are less likely than biological children to provide assistance across all outcomes. Contrary to expectations, however, the biological children of a parent who also has step children are no less likely than biological children of a parent who has no step children to transfer resources to their elderly parent. In fact, biological children whose sibling network included only additional step children were significantly more likely to provide care and to coreside with the parent—a result that might reflect their attempt to compensate for the reduced involvement of step children. As indicated by our parent-level analyses (Pezzin and Schone 1999), however, the offsetting behavior by biological children in these families does not compensate fully for the lower level of transfers by step children.

Historically, children's provision of time services to their elderly parents has been an important form of economic transfer to the elderly (Morgan 1984). The findings of reduced transfers from adult children and their elderly parents depending on parental marital status, kin relationship and, to a lesser extent, family type suggests that changing family patterns are altering the traditional role of the family as a support network. These findings raise concerns about future generations of elderly persons who will have experienced substantially higher rates of divorce, remarriage, and step parenthood than the cohort considered in this study. Evidence suggests increased reliance on subsidized formal care among elderly persons facing reduced informal care provided by their adult children (Spillman and Pezzin 2000). That evidence and our findings imply increased demands on public programs, such as Medicare and Medicaid, to fill in the gap resulting from lower levels of private transfers within these complex families. Of equal concern is the possibility that disabled elderly persons who are not eligible for public long-term care benefits and who cannot otherwise afford formal care will have their needs unmet.

In addition to highlighting the complexities associated with defining and measuring family type, our study also indicates that much remains to be learned about family behavior and suggests several avenues for future exploration. Data limitations preclude investigating the dynamic processes underlying intergenerational relations. A notable limitation of the AHEAD surveys is the lack of information about the timing and nature of early family transitions. For example, the data do not allow us to distinguish step relationships that result from remarriage following widowhood from those that result from remarriage following divorce or marriage following a nonmarital birth. We are also unable to ascertain directly the relationship *among* adult children (full siblings, half siblings or step siblings) or the alternative demands placed on step children who may be at risk for providing care to their own biological parents. Finally, we know little about the parents or sibling networks of the spouses of the adult children in our sample. Information about the timing of family transitions and the history of all members in the extended family would allow us to distinguish the potentially differential effects of the step relationships acquired through alternative processes and the effects of competing demands on transfers from biological children and step children. Such analyses require rich and complex data on the extended family, an important but currently unavailable resource for this population.

Finally, research on the relationship between family type and transfers to the elderly may shed some light on the motives for intergenerational transfers. Research examining the underlying motives for late life child-to-parent transfers has generally ignored family type, implicitly assuming that elderly parents and adult children shared the economic and social stability of traditional nuclear families throughout their lives. Our results suggest the need to consider family type, in addition to divorce and remarriage, when constructing and estimating these models.

REFERENCES

Altonji, J.G., F. Hayashi, and L. Kotlikoff. 1996. "The Effects of Income and Wealth on Time and Money Transfers Between Parents and Children"" NBER Working Paper no.5522.

Aquilino, W.S. 1994. "Impact of Childhood Family Disruption on Young Adult's Relationships with Parents" *Journal of Marriage and the Family*, 56:295-313.

Biblarz, T. J., and A. E. Raftery, 1999. "Family Structure, Educational Attainment, and Socioeconomic Success: Rethinking the 'Pathology of Matriarchy'" *American Journal of Sociology*, 105: 321-65.

Cherlin, A. 1978. "Remarriage as an Incomplete Institution" *American Journal of Sociology* 84:634-650.

Cherlin, A., F. Furstenberg, P. Chase-Landsdale, P. Lindsay. 1991. "Longitudinal Studies of Effects of Divorce on Children in Great Britain and the United States" *Science* 252(5011):1386-89.

Coleman, J.S. 1988. "Social Capital in the Creation of Human Capital" *American Journal of Sociology* 94:S95-S120.

Cooney, T.M. and P. Uhlenberg. 1990. "The Role of Divorce on Men's Relations with Their Adult Children After Midlife" *Journal of Marriage and the Family* 52:677-688.

Duncan, G.J. and S.D.Hoffman. 1985. "A Reconsideration of the Economic Consequences of Marital Dissolution" *Demography* 22:485-497.

Dwyer, J.W. and R.T. Coward. 1991. "A Multivariate Comparison of the Involvement of Adult Sons Versus Adult Daughters in the Care of Impaired Adults" *Journal of Gerontology: Social Sciences* 46:S259-269.

Eggebeen, D.J. 1992. "Family Structure and Intergenerational Exchanges" *Research on Aging*: 14(4):427-447.

Freedman, V.A. 1996. "Family Structure and the Risk of Nursing Home Admission" *Journal of Gerontology: Social Sciences* 51B:S61-S69.

Furstenberg, F.F. 1987. "The New Extended Family: The Experience of Parents and Children After Remarriage" In K. Pasley and M. Ihinger-Tallman (eds.), *Remarriage and Stepparenting: Current Research and Theory*. New York:Guilford Press.

Furstenberg, F.F, C.W. Nord, J.L. Peterson, and N. Zill. 1983. "The Life Course of Children of Divorce: Marital Disruption and Parental Conflict" *American Sociological Review*

48:656-668.

Furstenberg, F.F. and A.J.Cherlin. 1991. *Divided Families: What Happens to Children When Parents Part.* Cambridge, MA: Harvard University Press.

Furstenberg, F.F., S.D. Hoffman and L. Shrestha. 1995. "The Effect of Divorce on Intergenerational Transfers: New Evidence" *Demography* 32:319-333.

Ginther, D.K. and R. A. Pollak. 2004. "Family Structure and Children's Educational Outcomes: Blended Families, Stylized Facts, and Descriptive Regressions" *Demography* 41:4 671-696.

Haveman, R. and B. Wolfe.1995. Succeeding Generations: On the Effects of Investments in Children. New York, NY: Russell Sage Foundation.

Johnson, C.L. 1989. "Divorce-Related Changes in Relationships" In *Aging Parents and Adult Children*, J.A. Mancini (ed.). Lexington: Massachusetts.

Kotlikoff, L.J. and J. Morris. 1990. "Why Don''t the Elderly Live with Their Children? A New Look," in David A. Wise, ed., *Issues in the Economics of Aging,* National Bureau of Economic Research. Chicago and London: University of Chicago Press, 1990, pp. 149–69.

Kreider, R.M. and J.M. Fields. 2002. "Number, Timing, and Duration of Marriages and Divorce: 1996" U.S. Census Bureau Current Population Reports February.

Lye, D.N., D.H. Klepinger, P.D.Hyle, and A. Nelson. 1995. "Childhood Living Arrangements and Adult Children's Relations with Their Parents" *Demography* 32:261-280.

McGarry, K. and R. Schoeni. 1997. "Transfer Behavior within the Family: Results from the Asset and Health Dynamics Survey" *Journals of Gerontology* 52B:82-92.

McLanahan, S. and G. Sandefur. 1994. *Growing Up with a Single Parent.* Cambridge: Harvard University Press.

Martin, T.C. and L.L. Bumpass. 1989. "Recent Trends in Marital Disruption" *Demography* 26:37-51.

Morgan, J. 1984. "The Role of Time in the Measurement of Transfer and Well-Being." In *Economic Transfers in the United States: Studies in Income and Wealth.* Marilyn Moon (ed.), 199-234. Chicago: University of Chicago Press.

Morrison, D. and A. Cherlin. 1995. "The Divorce Process and Young Children's Well-being:

A Prospective Analysis" *Journal of Marriage and the Family* 57(3):800-12.

Painter, G. and D. Levine. 2000. "Family Structure and Younth's Outcomes: Which Correlations Are Causal?" *Journal of Human Resources* 34(3): 524-549.

Pezzin, L.E. and B. Schone. 1999. "Parental Marital Disruption and Intergenerational Transfers: An Analysis of Lone Elderly Parents and Their Children," *Demography* 36(3): 287-297.

Pezzin, L.E. and B. Schone. 2001. "Exploring the Theoretical Foundations of Altruism: An Analysis of the Effects of Divorce and Remarriage on Intergenerational Living and Care Arrangements" in P.K. Chopra and B.N. Ghosh (eds.) *Gender and Development.* Wisdom House Press: England.

.

Seltzer, J.A. and S.M. Bianchi. 1988. " Children's Contact with Absent Parents" *Journal of Marriage and the Family* 50:663-677.

Smith, T.W. 1999. "The Emerging 21st Century American Family" National Opinion Research Center, University of Chicago, November 24.

Spillman, B.C. and L.E. Pezzin, 2000. "Potential and Active Family Caregivers: Changing Networks and the Sandwich Generation." *The Milbank Quarterly* 78(3):347-374.

Waite, Linda J. 1995. "Does Marriage Matter?" *Demography* 32:483-508.

Waite, L.J. and M. Gallagher. 2000. *The Case for Marriage : Why Married People are Happier, Healthier, and Better off Financially.* Doubleday.

Weiss, Y. and R. J. Willis. 1985. "Children as Collective Goods in Divorce Settlements," *Journal of Labor Economics,* 3(3): 268-292.

White, L. 1994. "Stepfamilies over the Life Course: Social Support" Paper presented at the National Symposium on Stepfamilies, Pennsylvania State University, PA.

Table 1: Cash and Time Transfers and Living Arrangements of Children, by Parent's Marital Status and Marital History, Child-Parent Relationship and Family Type

			Living Arrangement				
	Cash Transfers	Time Transfers	Parent Lives Alone	Parent Lives in Nursing Home	Parent Lives with Others	Parent Lives with Index Child	Parent Lives with Other Child
Parent's Marital Status and Marital History							
Child Has Widowed Parent	9.9	15.9**	60.3**	7.5*	6.3	7.9**	18.1***
Child Has Separated/Divorced Parent	11.7	11.4	65.9	9.8	7.8	4.6	11.9
Child Has Parent That Has Never Remarried	11.0***	15.8	61.3	7.3*	6.4	7.6	17.5
Child Has Parent That Has Ever Remarried	7.6	14.8	59.4	8.9	6.5	7.5	17.7
Only Children (N=354)							
Biological Child	17.5*	36.5**	66.0	10.1	7.4	16.6*	N.A.
Step Child	3.6	17.9	75.0	14.3	7.1	3.6	
Children w/ Siblings (N=4509)							
Biological Child	10.0***	14.6***	60.2	7.3*	6.3	7.3***	18.8
Step Child	2.4	3.1	62.4	10.2	6.7	1.6	19.2
Family Type (N=4509)							
No Step Children Present in Family	9.8*	14.5***	60.2	7.4	6.2	7.2*	19.1
Step Children Present in Family	7.4	9.5	61.7	8.6	7.6	4.9	17.1

Notes: Statistical differences between each set of rows are denoted by *** (p < .01);** (p <.05); * (p<.10).

Table 2: Estimated Bivariate Probit and Multinomial Logit Models of Transfers and Living Arrangement Only Children

			Living Arrangement		
	Cash Transfers	Time Transfers	Parent Lives in Nursing Home	Parent Lives with Others	Parent Lives with Index Child
			Relative Risk Ratios (Parent Lives Alone is Reference Category)		
Relationship & Family Type					
Index Child is Step Child	-0.94*	-0.73**	1.11	0.68	0.14**
	(0.49)	(0.33)			
Parental Marital Status & History					
Parent is Divorced	0.29	-0.27	0.22	0.12**	0.30*
	(0.28)	(0.29)			
Parent was Ever Remarried	0.04	-0.33	1.59	0.64	1.26
	(0.21)	(0.20)			
Parental Characteristics					
Parent is Female	0.39	0.31	0.93	1.43	0.86
	(0.32)	(0.25)			
Parent is Black[a]	0.29	0.51**	0.73	2.65	2.95**
	(0.23)	(0.21)			
Parent is Hispanic	-0.29	-0.07	≈0***	4.67	2.27
	(0.54)	(0.40)			
Parent is High School Graduate[b]	-0.14	0.37**	0.63	0.64	1.44
	(0.21)	(0.19)			
Parent is College Graduate	-0.16	0.12	0.76	1.09	1.75
	(0.23)	(0.23)			
Parent has 1-2 ADLs[c]	-0.19	-0.24	1.00	1.02	1.08
	(0.21)	(0.19)			
Parent has 3+ ADLs	-0.16	0.81***	9.12***	2.09	1.87
	(0.23)	(0.20)			
Parent's Age (÷ 10)	-0.12	0.31**	1.87	1.22	1.10
	(0.17)	(0.15)			
Parent's Net Worth (÷ 10,000)	-0.01*	-0.001	0.96**	0.97	0.99
	(0.01)	(0.01)			
Parent's Income (÷ 10,000)	-0.10	0.01	1.64	1.00	1.40
	(0.20)	(0.15)			

	Cash Transfers	Time Transfers	Living Arrangement: Parent Lives in Nursing Home	Living Arrangement: Parent Lives with Others	Living Arrangement: Parent Lives with Index Child
			Relative Risk Ratios (Parent Lives Alone is Reference Category)		
Child Characteristics					
Child is Female	-0.37	0.40	2.00	1.55	0.87
	(0.31)	(0.25)			
Child's Age (÷ 10)	0.06	-0.05	0.93	0.89	1.25
	(0.11)	(0.10)			
Child is High School Graduate[b]	-0.63*	-0.76**	0.84	3.26	1.11
	(0.33)	(0.32)			
Child is College Graduate	0.20	0.24	0.62	1.45	0.93
	(0.19)	(0.17)			
Child is Married	-0.05	-0.04	1.34	0.97	0.18***
	(0.19)	(0.17)			
Child Has No Children	0.55**	-0.15	1.02	0.79	0.92
	(0.27)	(0.25)			
# of Children	0.03	-0.01	1.01	0.99	0.87
	(0.05)	(0.05)			
Child is Financially Worse than Parent	-0.81**	-0.43*	2.03	1.99	≈0***
	(0.33)	(0.25)			
Child and Parent are the Same Gender	0.54*	-0.07	0.41	0.41	0.61
	(0.31)	(0.25)			
Constant	-0.56	-3.47***			
	(1.18)	(1.10)			
ρ	.23** (0.11)				
Log of the Likelihood	-325.3***		-276.1***		
N	354		354		

Notes: Coefficients are statistically different from zero at *** ($p < .01$); ** ($p<.05$); and * ($p < .10$)

a Reference category for race/ethnicity is other

b Reference category for education is less than high school

c Reference category for disability is parent has only IADLs

Table 3: Estimated Bivariate Probit and Multinomial Logit Models of Transfers and Living Arrangement Children with Siblings

	Cash Transfers	Time Transfers	Living Arrangement: Parent Lives in Nursing Home	Parent Lives with Others	Parent Lives with Index Child	Parent Lives with Other Child
			Relative Risk Ratios (Parent Lives Alone is Reference Category)			
Relationship & Family Type						
Index Child is Step Child	-0.81**	-1.32***	0.68	0.74	0.12**	0.60
	(0.41)	(0.42)				
Parent Has Other Step Children	0.27	0.31	3.23	1.43	1.10	2.37
	(0.48)	(0.47)				
Parent Has Other Biological Children	0.09	-0.44**	1.56	0.60	0.53	4.14*
	(0.29)	(0.22)				
Biological Child*Parent Has Step Child.	-0.13	-0.34	0.32	0.80	0.86	0.25**
	(0.49)	(0.48)				
Parental Marital Status & History						
Parent is Divorced	0.10	-0.25**	1.41	1.46	0.46*	0.58
	(0.17)	(0.11)				
Parent was Ever Remarried	-0.18	0.06	1.08	0.83	1.13	1.14
	(0.11)	(0.06)				

	Cash Transfers	Time Transfers	Living Arrangement: Parent Lives in Nursing Home	Parent Lives with Others	Parent Lives with Index Child	Parent Lives with Other Child
			Relative Risk Ratios (Parent Lives Alone is Reference Category)			
Parental Characteristics						
Parent is Female	0.15	0.08	0.84	1.87	1.61*	1.30
	(0.16)	(0.09)				
Parent is Black[a]	0.25**	-0.02	0.84	1.98**	1.67**	2.34***
	(0.13)	(0.08)				
Parent is Hispanic	0.07	-0.07	≈0***	0.63	1.75*	1.61
	(0.17)	(0.11)				
Parent is High School Graduate[b]	-0.12	0.08	1.21	1.72	1.03	1.04
	(0.14)	(0.08)				
Parent is College Graduate	-0.04	-0.16	1.62	1.31	0.57*	0.69
	(0.16)	(0.10)				
Parent has 1-2 ADLs[c]	-0.09	0.08	1.74	1.31	0.91	1.10
	(0.11)	(0.08)				
Parent has 3+ ADLs	-0.09	0.68***	14.60***	2.53**	1.16	1.50*
	(0.12)	(0.08)				
Parent's Age (÷ 10)	-0.03	0.29***	2.54***	0.85	1.66***	1.30
	(0.08)	(0.05)				
Parent's Net Worth (÷ 10,000)	-0.01**	-0.002	0.96*	1.00	1.00	0.99
	(0.004)	(0.002)				
Parent's Income (÷ 10,000)	-0.14	0.02	0.52*	1.11	0.99	0.85
	(0.10)	(0.07)				

	Cash Transfers	Time Transfers	Living Arrangement: Parent Lives in Nursing Home	Parent Lives with Others	Parent Lives with Index Child	Parent Lives with Other Child
			Relative Risk Ratios (Parent Lives Alone is Reference Category)			
Child Characteristics						
Child is Female	-0.07	0.43***	1.06	1.40**	0.77	0.95
	(0.07)	(0.07)				
Child's Age (÷ 10)	-0.01	-0.09***	0.98	0.93	0.64***	0.94
	(0.04)	(0.04)				
Child is High School Graduate[b]	-0.05	-0.01	1.35	1.65**	1.40*	1.19
	(0.12)	(0.07)				
Child is College Graduate	0.31***	-0.09	0.97	0.58**	0.93	1.07
	(0.08)	(0.06)				
Child is Married	0.07	-0.11**	0.88	0.88	0.11***	0.94
	(0.07)	(0.06)				
Child Has No Children	0.03	0.04	1.07	1.47	2.10***	1.21
	(0.10)	(0.08)				
# of Children	-0.03	-0.03	1.00	1.07	1.01	0.99
	(0.02)	(0.02)				
Child is Financially Worse than Parent	-0.32***	-0.22**	1.01	1.17	≈0***	1.02
	(0.10)	(0.09)				
All Siblings are Financially Worse than Parent	-0.26***	-0.09	0.95	1.31	0.68**	0.92
	(0.09)	(0.06)				
Child and Parent are the Same Gender	-0.02	0.11	0.68***	0.75*	1.39*	0.99
	(0.07)	(0.07)				
Number of Siblings	-0.01	-0.08***	0.88*	1.07	0.90***	1.14***
	(0.03)	(0.01)				
Constant	-0.96	-2.65***				
	(0.70)	(0.45)				

	Cash Transfers	Time Transfers	Living Arrangement: Parent Lives in Nursing Home	Parent Lives with Others	Parent Lives with Index Child	Parent Lives with Other Child
			Relative Risk Ratios (Parent Lives Alone is Reference Category)			
ρ	.11*** (0.04)					
Log of the Likelihood	-2935.2 ***			-4449.6 ***		
N	4509			4509		

Notes: Coefficients are statistically different from zero at *** (p < .01); ** (p<.05); and * (p < .10)

a Reference category for race/ethnicity is other

b Reference category for education is less than high school

c Reference category for disability is parent has only IADLs

Table 4: **Simulated Probabilities of Outcomes by Family Type and Relationship**

			Living Arrangement				
	Cash Transfers	**Time Transfers**	**Parent Lives Alone**	**Parent Lives in Nursing Home**	**Parent Lives with Others**	**Parent Lives with Index Child**	**Parent Lives with Other Child**
			Relative Risk Ratios (Parent Lives Alone is Reference Category)				
Baseline Prediction							
Only Children	16.4	35.0	66.7	10.5	7.3	15.5	
Children with Siblings	9.4	12.9	58.9	6.7	6.6	6.8	21.3
Only Children							
All Children are Biological	17.5*	36.5**	65.7	10.3	7.4	16.6*	
All Children are Step	3.8	17.4	76.8	13.3	6.3	3.6	
Children with Siblings							
A: Child is Biological & Siblings are Only Biological Children	9.6†	13.5†	58.5	6.7	6.6	6.8†	21.3
B: Child is Biological & Siblings are Only Step Children	10.3 ■	23.0†,‡	65.0	5.1 ♭	14.2	12.2†	3.6†,‡
C: Child is Biological & Siblings are Biological & Step Children	11.9†	12.9†	63.2	7.3 ♯	8.4	7.0⧗, ♯	14.1 ♯
D: Child is Step & Siblings are Only Biological Children	1.9	1.2	70.6	5.8	6.2	1.2	16.2
E: Child is Step & Siblings are Only Step Children	2.8	5.4 ♯	66.2	9.6	13.2	2.2	8.6 ♯
F: Child is Step & Siblings are Biological & Step Children	3.4	2.3	54.0	11.5	6.3	0.9	27.2

Notes: Differences between step and biological are statistically different at *** (p < .01); ** (p<.05); and * (p < .10)

† denotes that category is significantly different than Rows D, E, and F at p <.10; ■ denotes that category is different than Rows D, E at p <.10; ‡ denotes category is different than Row C at p<.10; ♭ denotes category is different than Row E at p < .10; ♯ denotes category is different than F at p < .10; ⧗ denotes category is different than D at p < .10.

Appendix Table 1: Variable Definitions and Summary Statistics

Variable	Definition	Mean
Dependent Variables		
Anycash	=1 if child gave parent ≥$500 in past 2 years; 0 otherwise	.10
Anytime	=1 if child gave parent ADL/IADL assistance in past 4 weeks; 0 otherwise	.15
Living Arrangement	=1 if parent lives alone; =2 if parent lives in nursing home; =3 if parent lives with someone other than child; =4 if parent lives with index child; =5 if parent lives with other child	.61 (1) .07 (2) .06 (3) .08 (4) 17 (5)
Parent's Marital Status, Marital History, and Family Type		
Pdivorced	=1 if parent of child is separated or divorced; 0 otherwise	.09
Remarry	=1 if parent of child ever remarried; 0 otherwise	.27
Step	=1 if child is step-child of parent; 0 otherwise	.06
Any Step	=1 if parent of child has other children who are step children; 0 otherwise	.10
Any Bio	=1 if parent of child has other children who are biological children; 0 otherwise	.91
Bioblend	=1 if child is a biological child in a family with both step and biological children; 0 otherwise	.06
Other Parent Characteristics		
Pfemale	=1 if parent is female; 0 otherwise	.81
Black	=1 if parent is Black; 0 otherwise	.21
Hispanic	=1 if parent is Hispanics; 0 otherwise	.08
Phighschool	=1 if parent is high school graduate; 0 otherwise	.61
Pcollege	=1 if parent attended college; 0 otherwise	.16
ADL1-2	=1 if parent has 1 or 2 ADLs; 0 otherwise	.41
ADL3+	=1 if parent has 3 or more ADLs; 0 otherwise	.30
Age÷10	=parent's age divided by 10	8.1
Net Worth ÷	=parent's net worth divided by	8.1
Income÷	=parent's non-bequeathable income divided by	.25
Child Characteristics		
Female	=1 if child is female; 0 otherwise	.51
Age ÷10	=child's age divided by 10	5.2
HighSchool	=1 if child is high school graduate; 0 otherwise	.1
College	=1 if child attended college; 0 otherwise	.40
Married	=1 if child currently married; 0 otherwise	.68
NoKids	=1 if child has no children; 0 otherwise	.17
NumbKids	=number of children of child for those with children	2.4
WorseOff	=1 if child is financially worse off than parent; 0 otherwise	.13
AllWorse	=1 if all siblings of child are worse off than parent; 0 otherwise	.34
SameSex	=1 if child and parent are the same sex; 0 otherwise	.51
Sibs	=number of siblings of child	3.5