12-1995

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ISSN 1084-1695

Aging Studies Program Paper No. 3

CORESIDENCE WITH AN OLDER MOTHER: THE ADULT CHILD'S PERSPECTIVE

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December 1995

Support for the Aging Studies Program Series is provided by grant number P20-AG12837 from the National Institute on Aging.

Abstract

We estimate models of coresidence between adult children and their elderly unmarried mothers, using data from the National Survey of Families and Households. The models include controls for women's wages, along with other variables representing competing demands on their time. Among married couples we explicitly represent the "competition" for residential space between a child's mother and mother-in-law. The information necessary to identify the observations of interest—respondents with a living, unmarried older mother—is missing in most cases. We address this problem using a multiple imputation strategy. The results indicate that wages, income, and parental health are related to parent-child coresidence; among married couples, wives' mothers are more likely to coreside than are husbands' mothers, other things being equal.

CORESIDENCE WITH AN OLDER MOTHER: THE ADULT CHILD'S PERSPECTIVE

After several decades of decline, coresidence of adult children with older parents has become a relatively rare phenomenon.[1] Norms supporting the residential independence of single-generation families remain strong in spite of several potentially countervailing forces. Among these are the unanticipated improvement in old age survivorship (Manton 1991), economic downturns (Heer, Hodge, and Felson 1985), high levels of divorce (Thornton and Rogers 1987), and disruptions in the typical sequence of life-cycle transitions (Rindfuss 1991). Recent data indicate that only about 7 percent of adult children with a surviving parent coreside and only one in five elderly parents lives with an adult child (Freedman et al. 1991).

Accompanying the decline in intergenerational coresidence has been a rapid increase in the volume of research on this topic by scholars from several disciplines including economics (Michael, Fuchs, and Scott 1980; Kotlikoff and Morris 1990), sociology (Goldscheider and Goldscheider 1989; Ward, Logan, and Spitze 1992), and demography (Kobrin 1976; Wolf 1984; Wolf and Soldo 1988). While early work was primarily descriptive, focussing on the traits of those living in alternative living arrangements, more recent work has begun to place coresidence in the emerging and considerably broader literature on intergenerational transfers (Soldo and Hill 1993). From this perspective coresidence is understood as a transfer of resources—in this case, residential space—from one generation to another, although as we argue below the apparent direction of resource transfers does not necessarily coincide with changes in overall well-being. Indeed, most recent research on residential decision making proceeds from the assumption that outcomes are the result of choices consciously made by all potentially affected parties, each of whom weighs the net benefits of all feasible options. The potential benefits conveyed by a particular coresidential arrangement include

cost savings through economies of scale, consumption of domestic services, personal care for a parent or child, and companionship; the potential costs include loss of privacy and autonomy as well as commitments of time (Burch and Matthews 1987).

Most research on parent-child coresidence involving the elderly has been cross-sectional, based on microdata from household surveys. Such survey data typically contain far more detail about the respondent than about his or her immediate family and household members, and even less about family members in other generations living elsewhere. Consequently most existing models of parent-child coresidence emphasize the needs and resources of either the adult child or the parent, with little ability to hold constant those of the other generation. Thus most models represent only dyadic decision making and resource flows.

Surveys of the elderly, for example, usually measure the health status and economic resources of older parents, but pay little attention to factors reflecting the capacity or willingness of adult children to respond to the financial or care needs of the parents. Models based on such data reflect these underlying limitations (Wolf and Soldo 1988; Crimmins and Ingegneri 1990; Bishop 1986). Other data may provide information on the economic circumstances or transitional situation of adult children, while characteristics of their parents as potential sources of a shared residence, or of other services, are largely unavailable or poorly measured (see, for example, Hill 1990; DaVanzo and Goldscheider 1987). There are some exceptions, such as Kotlikoff and Morris (1990), who model parent-child coresidence using data from a survey administered to pairs of older parents and their adult children, or Rosenzweig and Wolpin (1993), who use longitudinal kin-linked data. Nevertheless, most research on intergenerational coresidence reflects an imbalance between the conceptual framework—one emphasizing the relevance to residential outcomes of decision criteria for an array

of family members in multiple generations—and the data analyzed, which vary in their representation of the relevant variables across generations within a family.

This study examines coresidence between adult children and their elderly unmarried mothers. By focussing on this type of dyad, we mirror most prior research, which has examined the living arrangements of older unmarried (or, in some cases, widowed) women (Chevan and Korson 1972; Michael et al. 1980; Cooney 1989; Wolf and Soldo 1988). As in past research, our data provide a richer representation of the relevant traits of the informant—the adult child—than of other parties to the coresidence decision. We extend the existing literature, however, in several ways.

First, we incorporate in our empirical analysis a measure of the price of an adult child's time, measured in terms of predicted market wage rate, along with variables representing competing demands on that time, such as those associated with having young children. *Second*, for married children we explicitly represent the "competition" for residential space between a child's mother and mother-in-law. Because both the outcomes and the set of predictors are more complex for couples then for unmarried offspring, we develop separate models for married and unmarried children. *Third*, our work is of methodological interest. In our data the information necessary to identify the observations of interest—respondents with a living, unmarried older mother—is missing in most cases. We address this problem through use of multiple imputation (Freedman and Wolf 1995). We develop a strategy for randomly assigning sample selection criteria for the cases with missing data, and carry out a series of independent replications of the random imputation process. Final model estimates and their standard errors reflect the uncertainty introduced by this imputation procedure.

CONCEPTUAL ISSUES

Coresidence as the Outcome of a Discrete Choice Problem

Burch and Matthews (1987) describe living arrangements as choices made by family members from a limited set of possibilities. Each potential choice is characterized by its distinctive profile of household-goods consumption possibilities, with household goods including such things as shelter, domestic services, personal care, companionship, recreation, privacy, autonomy, power and authority. Choosing an option from this set involves weighing tradeoffs between alternative levels of each of these household goods. Independent living, which affords the most privacy and autonomy, is assumed to be the preferred arrangement, but it entails foregone economies of scale and a possible loss of companionship and access to services. Choices are constrained by the availability of potential opportunities for coresidence—the composition of the set of possible living arrangements—and by the functional capacity and financial resources of each individual evaluating the alternatives. The outcomes observed are assumed to result from choices in which each decision maker achieves the highest possible level of well-being, constrained by the options available.

This rational choice framework, presented here in narrative terms, is widely used in some form by researchers studying living arrangements of the elderly (Beresford and Rivlin 1960; Bishop 1986; Michael et al. 1980; Schwartz, Danziger, and Smolensky 1984; Wister 1986; Wolf and Soldo 1988). In adopting this perspective, we make no assumptions regarding the degree of cooperation— or conflict—encountered within the decision making process. Modeling conflicting preferences of individuals or couples within a larger family context is beyond the scope of this paper. Here we estimate reduced form models, which deal with either an individual or couple embedded within a complex web of family networks.

Some recent papers have argued that the needs of the younger generation are predominately served when an adult child coresides with his or her older parent (Aquilino 1990; Ward et al. 1992; Ward and Spitze 1992). The same papers criticize an assumption that implicitly or explicitly underlies earlier research, the assumption that coresidence of elderly parents and their children occurs primarily to serve the needs of the elders. Both positions are problematic, for conceptual as well as empirical reasons.

A fundamental tenet of the rational choice framework widely used to motivate research on parent-child coresidence is that the outcome observed is assumed to be optimal, for *all* parties to a given decision, *given all relevant constraints*. The optimality principle implies that no party to the decision can be made better off unless someone else involved in the decision is made worse off. Moreover, the principle holds that all parties to the chosen outcome gain, or at least do not lose, relative to all feasible alternatives. This principle is in direct conflict with the idea that either the younger *or* the older generation's needs are served by coresidence, if by implication the donor generation is made worse off by coresidence. A broader and, in our view, more appropriate view of the role of "needs" as motivators of coresidence is one in which the needs (and the "wants") of *all* parties to residential decisions are recognized. As examples, the well-being that a child achieves from knowing that his or her parent's personal-care requirements are satisfied, or that a parent attains from the knowledge that his or her unemployed child has adequate housing, conceptually offsets any losses (of privacy, autonomy, and so on) that accompany a transfer of space to a functionally-disabled older parent, or to an unemployed child.

Furthermore, the array of household goods recognized by Burch and Matthews (1987) include abstractions such as power, companionship, or security. It is a mistake, therefore, to overlook the unobserved "goods" that are inherently traded off against, or exchanged for, observables such as

space and material goods.[2] There are additional difficulties in interpreting empirical regularities as indicating which generation's needs are served by a coresidential arrangement. Aquilino (1990), for example, interprets the elevated risk of unmarried children living with their parents as evidence that the younger generation's needs motivate such arrangements. But an unmarried adult child has a lower opportunity cost of time than does a married child, especially a married child with children of his or her own, and therefore may more willingly *supply* coresidence than would the married child.

Differences in coresidence patterns among parent-child pairs reflect not only differential resources across and within the generations of families, but also possible differences in preferences for coresidence by gender and marital status. Among older people in general, coresidence with adult children is uncommon, and among married older couples it is rare. Unmarried older women have a relatively high risk of coresiding with an adult child. For these reasons we focus our analysis on adult children who have an older unmarried mother, and develop models of coresidence among mother-child pairs.

Correlates of Living Arrangements Choices

Because we conceptualize living arrangements choices as the result of a joint decision involving all potential coresident kin, we require data representing the decision criteria of all these family members in order to model those choices. Theory and past research suggest a number of possible such decision criteria.

An important correlate of living arrangements is difficulty with personal care activities, represented by health or functional status (Wolf 1984, 1990; Bishop 1986; Soldo, Wolf, and Agree 1990). Economic resources, usually measured by income flows, also have been shown to be important, with higher-income individuals or couples more likely to live independently (Soldo and Lauriat 1976; Michael et al. 1980; Bishop 1986). The role of the adult child's home ownership has

not been considered in past research, although studies of coresidence have shown the importance of home ownership among elderly women as a determinant of living independently (Wolf and Soldo 1988). Since home ownership reflects the residential stability of the adult child, it is expected that home ownership would be inversely related to coresidence.

Coresidence may imply a reallocation of time in home production. Thus, factors related to the value of time in other uses are relevant to coresidence decisions. Kotlikoff and Morris (1990) argue that an adult child's wage rate, other income, and competing demands on their time should affect the residential choices of older parents. Some evidence in support of this argument is found in Wolf and Soldo (1988), in which the sex, marital status and employment status of adult children are shown to affect the propensity to coreside with an elderly mother. Wolf and Soldo (1994) find that the presence of young children in an adult daughter's home lowers her propensity to care for an older parent. The labor market activity of daughters has traditionally been more responsive than that of sons to family care demands. Thus, we expect to find that adult daughters with relatively high wage rates are less likely to live with an elderly mother. To the extent that market substitutes exist for the services that might be provided by an adult child, the child may trade off purchased services for time spent helping his or her parent (Soldo and Freedman 1994).

In addition to the decision criteria relevant to individual members of the family group, the overall size and composition of the family group shapes the set of potential outcomes, having a structural effect on residential arrangements. From the older person's perspective, the more children one has the more opportunities there are for coresidence. From a child's vantage point, however, additional siblings are likely to lower any single child's probability of coresiding, depending on the characteristics of the siblings. Analyses that depict each child as a distinct living arrangement opportunity, for example, indicate that having younger sisters reduces a child's probability of

coresidence (Wolf and Soldo 1988). Observed racial and ethnic differences in family size, as well as in education, may account for the increased likelihood of multi-generational living arrangements among blacks and Hispanics (Aquilino 1990; Burr and Mutchler 1992; Zsembik 1993).

Among married children of elderly parents, additional issues arise which make the coresidence decision more complex. A couple potentially has two opportunities to coreside with an elderly mother. Each spouse's mother might require assistance, but each might have one or more other children—including other married children—with whom she could potentially coreside. The chain of interlocking or overlapping family networks theoretically relevant to the living arrangement observed for a particular couple may be quite extensive, including siblings, spouses of siblings, and their children. Such complexities have rarely been addressed, although they are the subject of several studies of married couples' living arrangements in Japan (Hirosima 1987, 1988; Kojima 1990), where shared living arrangements, particularly with son's mothers, are more common. Kojima (1990) modeled the married couple's decision to coreside with either spouse's mother. His results indicate that characteristics of both the husband and wife (birth order; family size), along with those of the elderly mothers (marital and health status), are important predictors of coresidence.

DATA AND METHODS

We use data from the 1987-88 National Survey of Families and Households (NSFH) (Sweet, Bumpass, and Call 1988). The NSFH collected detailed information from 13,017 respondents aged 19 and older using a combination of in-person and self-administered questionnaires. A wide variety of topics were covered, including household structure, marriage, family, childbearing, and kin networks. Respondents provided information about household members and non-resident kin, including parents and siblings. Spouses provided information about their own non-resident kin in a

self-administered questionnaire. Because we use data collected from the adult child, only a few characteristics describing the older parent are available. Nevertheless, this approach allows us to examine characteristics of children in detail, while at the same time considering the most important traits of parents (i.e., their age and health status) related to coresidence.

Separate samples were constructed for unmarried sons, unmarried daughters, and married couples. In each case, we included those whose mother was aged 65 or older and not currently married (hereafter referred to for convenience as "unmarried"). For married respondents, cases were included if either the husband's or wife's mother fell into this category. This sampling restriction was imposed because prior research demonstrates that very few elderly couples or unmarried fathers coreside with an adult child (Aquilino 1990).

For adult children living in their mother's household, we also impose the restriction that the adult child must have left home to live independently at some point prior to the survey date. This requirement eliminated 17 cases in which the adult child was likely to have been (and to remain) a long-term dependent of the parent. Our objective here is to analyze cases in which coresidence can be argued to reflect a decision to transfer resources across generations.

Imputation of Sample Selection Criteria

Information regarding the current marital status of elderly mothers is not uniformly available due to the design of the NSFH questionnaire. A mother's (and mother-in-law's) marital status is known only if she is still married to the father of the respondent (spouse) or is actually living with the respondent. Otherwise, if the father has died, or both parents are alive but no longer married to each other, the mother's current marital status is not clearly indicated.

This type of missing data problem is an extreme example of the kind of item nonresponse problem researchers commonly face in analyzing survey data. A number of strategies have been

developed to handle missing data. Some of the most widely used techniques—filling in missing data points with the mean of known observations, assigning a single imputed value based on information from a matching respondent (i.e., "hot-decking")—can result in underestimates of the variance of sample statistics.

Multiple imputation (Rubin 1987) is a technique that improves on single imputation methods by accounting for the uncertainty introduced by the imputation procedure. In one variant of this approach, imputation equations are developed from the observed data if data are missing at random, or from auxiliary data. Rather than assigning a single imputed value to replace a missing data point, an *array* of *K* independently determined predicted values is generated and assigned. This array represents a distribution of possible values, and reflects uncertainty associated with the (probabilistic) imputation procedure. Each of the *K* augmented data set can then be analyzed using relatively standard techniques, with the variance estimates adjusted to take into account the additional variability introduced by the imputation procedure.

We use this method to create multiple indicators of the respondent's mother's (and mother-in-law's) current marital status. This indicator (1 if currently unmarried, 0 otherwise) is then used to select observations for analysis. In the model estimated for married couples only, the imputed "mother unmarried" variables also appear as covariates.

In order to develop equations with which to predict the value of the "mother unmarried" variable, we use a subsample from the NSFH consisting of older female respondents with living adult noncoresident children. This "shadow sample" contains one record for each older mother/adult child pair, and therefore parallels the sample used in our coresidence modeling. In the shadow sample, the mother's marital status is always known, allowing us to use it to estimate predictive equations for

mother's marital status. A brief account of the multiple imputation procedure is given below; a more detailed description is provided in Freedman and Wolf (1995).

We estimate logistic regressions for mother's marital status, using as predictors information provided by older women in the NSFH about their own characteristics and those of their adult children. These include the child's age and number of siblings, and the mother's race and age. The estimated equations are then used to impute the value of mother's (and mother-in-law's) marital status for the original sample of adult sons and daughters, among cases in which those statuses were not recorded. Ten independent imputations were carried out for each adult child whose mother's marital status was missing.

These imputed variables were used to create ten samples of adult children at risk for coresidence. Thus, for unmarried sons, unmarried daughters, and married couples, we have ten analysis samples, with each of which we estimate a logistic regression model predicting whether or not that child lives with his or her mother. Table 1 presents the sample sizes of children in each subsample. On average 378 unmarried daughters, 164 unmarried sons, and 1,263 couples were imputed to have an elderly unmarried mother. Among *couples* at risk for coresidence, about 43 percent were at risk for living with the wife's mother, 45 percent were at risk for living with the husband's mother, and the remaining 12 percent were at risk for living with both mothers.

Computation of Model Estimates and Standard Errors. For the samples of unmarried offspring, we use binary logistic regression to predict the log-odds of coresiding with the respondent's unmarried elderly mother. For couples we use a trinomial logit framework, modified to account for the three different patterns of at-risk status. The probability of coresidence with mother j (j=1 indicates the husband's mother, and j=2 indicates the wife's mother) is given by equation (1), in which R_j is a dummy variable indicating that the couple is at risk of coresidence with

the j^{th} mother. The outcome Y=0 corresponds to coresidence with *neither* mother, with implicit parameter vector $\beta_0 = 0$. If only one of the spouse's mothers is at risk according to our criteria, equation (1) collapses to a binary logit expression. The dependent variable therefore represents three mutually exclusive categories: coresidence with neither mother, with the wife's mother, or with the husband's mother.[3]

$$Pr[Y = j] = \frac{R_j e^{\beta_j X}}{1 + R_1 e^{\beta_1 X} + R_2 e^{\beta_2 X}} \qquad (1)$$

The final coresidence model parameters are obtained by averaging the ten sets of logistic parameter estimates. The estimated variances of these parameters, however, are obtained by adding to the average of the ten submodel variances an additional term representing the uncertainty associated with the imputation technique (see Freedman and Wolf 1995).

Variables

The operational definitions of all explanatory variables are presented in Table 2. For unmarried children, characteristics of the respondent and his or her mother were used to predict coresidence. For couples, parallel variables were constructed for husband and wives (e.g., own age, sibling structure) and for both spouse's mothers (health, age). Most variable definitions are identical for single and married children, with the few exceptions noted.

Three dummy variables are used to represent racial background, non-Hispanic White, Black, and Other. The omitted category for comparison is Black.[4] Age is coded in single years. For unmarried sons and daughters, previously married children are distinguished from never married children with a dummy variable. To represent the competing demands of other family members, a dummy variable indicating the presence of a child less than ten years of age in the household is used.

Alternative opportunities for coresidence are considered by including variables representing the siblings of the adult child. For unmarried adult children, two variables are included to contrast with having exactly one sibling: no siblings, and two or more siblings. For couples, sibling structure variables represent a contrast of having no siblings to having one or more siblings.

Economic resources of the adult child are also considered. Because women's labor market time tends to be relatively elastic (Killingsworth 1983) we use a variable indicating the value of a daughter's time in paid employment to predict coresidence. Market wages (in dollars per hour) were estimated for daughters under age 62 from a selectivity-corrected wage equation (Heckman 1976). Women aged 62 and older were not included in the wage selection equation because the selection mechanism underlying their workplace decisions is likely to differ from that of younger women, given that at age 62 women become eligible for retirement benefits. Thus, the predicted wage for daughters aged 62 and older is set to zero; an additional dummy variable indicates that the daughter is in the 62-and-older category. For men, whose labor supply is likely to be relatively inelastic to family needs (Couch, Daly, and Wolf 1995), we use annual earnings (in $1000s) from employment (including self-employment) to represent the son's economic resources. A dummy variable is used to flag cases with missing data on the income items. In addition to these employment-related variables, we introduce a dummy variable representing whether or not the respondent (and his or her spouse, if appropriate) owns a home.

A limited number of variables representing the older, unmarried mother are also included in the model. The mother's age is coded in single years. The health of the parent is represented by a dummy variable indicating whether or not the adult child reports his or her mother's health as "poor." For couples, the characteristics of each at-risk mother are treated as attributes of the outcome of interest and thus appear only in the coefficient vectors to which they pertain. Competition between

in-laws is modeled by introducing a variable representing the at-risk status of the husband (wife) to predict coresidence with the wife's (husband's) mother. Note that this is an imputed variable which can change in value from sample to sample. Finally, we introduce into the model for couples a variable indicating that information about the spouse was not available due to a missing spouse questionnaire. Cases with "No spouse information" coded as one have zeros coded for all spouse attribute variables.

RESULTS

Unmarried Daughters and Sons

Means for variables of interest are obtained by averaging over the ten subsamples defined by the multiple imputation of the mother's marital status. Results for unmarried sons and daughters are presented in Table 3. Sixty percent of the adult children are non-Hispanic White. Daughters and sons are on average aged 44 and 41, respectively. The average age of their mothers is about age 74; on average one in five are reported to be in poor health. Averaging over the 10 samples, 12.7 percent of unmarried daughters and 15.2 percent of unmarried sons coreside with their unmarried older mother.

We present results for logistic regression models for unmarried daughters and sons in Table 4. Coefficients represent the effect on the log-odds of living with the respondent's mother. Since the value of the coefficient divided by its standard error is asymptotically normal, we compare the square of this value (shown in parentheses) to a X^2 distribution; i.e., a Wald test. The third column of the table contains X^2 statistics for comparisons of coefficients in the sons' and daughters' equations. The latter test statistics were obtained from a single model with a full interaction specification.

We first consider the effects of the unmarried adult child's attributes on the log-odds of living with his or her own mother. Marital status is an important predictor of coresidence, even among single adult children. For both sons and daughters, previously married children are less likely than never married children to live with an elderly parent. As anticipated, we find an inverse association between economic resources and the log-odds of coresidence. A daughter's hourly market wage is inversely related to the odds of living with her own mother ($0.10<p<0.05$); for men the same pattern is seen for annual income ($p<0.01$).

For unmarried daughters several additional variables are significant predictors of shared living arrangements. Effects of sibling structure on coresidence are evident: daughters with two or more siblings have a lower odds of coresiding than daughters with exactly one sibling. The daughter's age is inversely related (with borderline significance) to the odds of coresiding; at the same time the mother's age is positively related to the outcome. Finally, a daughter with a mother in poor health has over 3 times (that is, $e^{1.21}$) the odds of living with her mother, compared to a daughter with a mother whose health is fair or better.

Married Couples

Average values of explanatory variables for the sample of couples are presented in Table 5. There are few differences among couples at risk for coresidence with the wife's unmarried mother, the husband's unmarried mother, or the unmarried mothers of both spouses. Few of the husbands and wives (about 10 percent) in these samples are without siblings. Because men tend to marry somewhat younger women, the average age of spouses at risk for living with the husband's mother is somewhat younger than in the subsample at risk only for co-residence with the wife's mother. The child whose mother is at risk for coresidence is on average 47 years old—somewhat older than the average age of unmarried sons and daughters at risk for co-residence. Because couples are younger

on average if only the husband's mother is unmarried and elderly, they are more likely to still have young children in the household; 53 percent of those at risk for living with the husband's mother have at least one child age 10 or under in the household compared to 38 percent of couples at risk for coresidence with the wife's mother. The attributes of couples in which both spouse's mothers are unmarried and elderly are largely similar to those couples at risk only for coresidence with the wife's mother. Mothers deemed to be at risk for coresidence are on average about 75.6 years of age and one in five are in poor health. Within at-risk groups, the marginal probabilities of living with the wife's mother are appreciably higher than those for living with the unmarried elderly mother of the husband.

The logistic regression coefficients for couples at risk for coresiding with either the wife's or the husband's mother are shown in Table 6. Both the mother's health status and an absence of siblings have symmetric and significant effects on shared living arrangements. When either the wife's or husband's mother's health is poor, the couple is significantly more likely to coreside with that mother. Similarly, if the husband has no living siblings, coresidence with his mother is more likely, while the same is true of the wife's mother if the wife has no siblings.

This analysis offers no support for the idea that competing demands on an adult child diminish resource flows to his or her parent. In fact, the presence of a child aged ten or younger in the household is associated with *increased* odds of coresiding with the wife's mother. One possible explanation for this finding is that coresidence may be chosen in order to provide a source of child care.

Finally, the variables measuring the couple's economic resources produce interesting, but somewhat unexpected, results. The husband's income is negatively related to the log-odds of coresidence with his mother, consistent with the hypothesis that residential privacy is preferred

(Schwartz et al. 1984). The wife's predicted wage rate also is negatively related to the likelihood of coresidence with her mother ($.10<p<.05$), consistent with the hypothesis that coresidence entails use of her time in caregiving, for which market work competes favorably among high-wage women. However, the husband's income has no effect on the propensity to live with the wife's mother, and the wife's predicted wage is *positively* ($.05<p<.01$) related to coresidence with her mother-in-law. The explanation for the latter finding is unclear. Sensitivity analyses were conducted by including alternative predictors of market wage (i.e., alternative overidentifying exclusions) to explore the possibility that these findings reflect omitted-variable bias; however, this curious finding remained unaltered. A somewhat facetious possible interpretation is that higher-wage married women, who are more likely to be employed (and therefore out of their home), more readily accept their mother-in-law's presence in their home.

Predicted probabilities, based on the coefficients shown in Table 6, are used to investigate the "competition" between the husband's and wife's mothers. These predicted probabilities of coresidence with each mother are shown in Table 7. The table presents probabilities based on all combinations of possible values for four dummy variables: whether each spouse is an only child, and whether the mother of each spouse is in poor health. These predicted probabilities were derived with the age and wage variables fixed at the sample means, and with income fixed at the sample median.

Note that in all but one instance, the probability of coresidence with the wife's mother exceeds that of the husband's mother. Only when the husband is an only child, the wife has at least one sibling, and only the husband's mother is in poor health is the probability of coresidence with the husband's mother higher. We would expect the probability of coresidence to be greatest when both spouses are only children whose mothers are in poor health, other things being equal.

DISCUSSION

Our analysis provides additional evidence that characteristics of both an older person and that older person's child are related to the probability that the two coreside. As with previous research, these findings indicate that older unmarried women in poor health have elevated odds of living with a child. At the same time, factors that reflect the child's willingness to reallocate time, possibly in order to provide personal-care assistance, influence that child's probability of coresidence with an unmarried mother.

Furthermore, variables reflecting alternative opportunities for coresidence influence the net probabilities of coresidence for a particular parent-child pair. The existence of siblings reduces the odds that a given unmarried daughter lives with her unmarried mother; however, this factor has no influence on the coresidence probability for an unmarried son.

Our analysis extends existing research by allowing for competition between a husband's and a wife's unmarried mother for coresidence with the married couple. This can, in principle, be as readily interpreted as competition to be the live-in child care provider for a grandchild as to be a "dependent" coresident receiving assistance or personal care. However, while the presence of young children raises the chances that the wife's, but not the husband's, mother will coreside, poor health—a likely indicator of need for assistance with personal care—raises *both* spouses' mothers' odds of coresidence. The "winner" in this competition depends not only on the relative health of both older mothers, but on their family size (which, from the perspective of the married spouses, is measured as number of siblings).

While the findings are of substantive interest, the paper has also introduced the use of multiple imputation—a statistical technique designed to deal with missing data—in order to isolate subsamples

of survey respondents at risk of living with an older unmarried mother. We anticipate that this technique will prove to be of more general use to demographers and other social scientists.

ENDNOTES

1. As Macunovich et al. (1995) point out, however, since 1985 the percentage of widows aged 65-69 living *alone* has fallen slightly.

2. Determining whose needs are served by an apparent transfer becomes more complex if the transfer is placed in a multiperiod context. A transfer flowing in one direction (between parent and child) at one point in the life cycle might represent an exchange balanced by an offsetting flow earlier in the life cycle, or an anticipated offsetting flow in the future (Henretta et al. 1995).

3. The category "lives with both mothers" was not included because there were no recorded cases of both spouses' mothers appearing in a married respondent's household in the NSFH.

4. The respondent's racial background was assumed to apply to the couple.

TABLE 1

SAMPLE SIZES: CHILDREN IMPUTED TO BE AT RISK FOR CORESIDENCE WITH AN ELDERLY UNMARRIED MOTHER

Sample	Unmarried Daughters	Unmarried Sons	Couples
1	376	171	1318
2	391	176	1231
3	390	169	1151
4	355	148	1323
5	388	163	1271
6	347	145	1255
7	382	171	1303
8	384	172	1240
9	379	161	1259
10	383	167	1274
Average	378	164	1263
Number Coresiding	48	25	60

TABLE 2

DEFINITIONS OF VARIABLES

Characteristics of Adult Children	
White	1 if White[a]
Other Race	1 if not Black or White
Previously Married	1 if separated, divorced, widowed
Child $\leq$ 10	1 if child aged $\leq$ 10 in household
Homeowner	1 if owns a home
Age	Single years
Siblings = 0	1 if has no siblings
Siblings = 2+	1 if has 2 or more siblings
Market Wage	Estimated vallue from selectivity-corrected wage regression (in dollars per hour)[b]
Market Wage Missing	Flag for no market wage available; 1 if aged 62+[b]
Income	Annual income (in thousands)[c]
Income Missing	Flag for missing income information; 1 if missing[c]
No Spouse Information	Flag for no spouse questionnaire; 1 if missing[d]
Characteristics of Elderly Mothers	
Age	Single years from aged 65 to 99
Health	1 if reported by adult child as poor

[a]Race of respondent used to characterize race of couple.
[b]Pertains only to adult daughters.
[c]Pertains only to adult sons.
[d]Pertains only to couples.

TABLE 3

AVERAGE VALUES OF VARIABLES DESCRIBING UNMARRIED CHILDREN AT RISK FOR CORESIDENCE WITH MOTHERS: AVERAGED OVER TEN IMPUTATIONS
(average sample size shown in parentheses)

	Daughters (378)	Sons (164)
Characteristics of Adult Children		
White	0.60	0.63
Other	0.10	0.10
Age	46.66	45.36
Previously Married	0.85	0.72
Child $\leq$ 10	0.17	0.08
Homeowner	0.56	0.53
Siblings = 0	0.14	0.13
Siblings = 2+	0.66	0.63
Market Wage	7.25	[c]
Market Wage Missing[a]	0.09	[c]
Income (in $1000s)	[b]	22.28
Income Missing	[b]	0.09
Characteristics of Elderly Mothers		
Age	74.63	74.44
Health	0.18	0.20
Percent Coresiding	12.7	15.2

Note: See Table 2 for variable definitions.
[a]Not estimated for women aged 62 and older.
[b]Pertains only to adult sons.
[c]Pertains only to adult daughters.

TABLE 4

LOGISTIC MODEL OF CORESIDENCE BETWEEN ADULT CHILDREN AND THEIR ELDERLY UNMARRIED MOTHERS

	Daughters	Sons	X^2
Characteristics of Adult Children			
Intercept	-5.50 (6.94)	-3.04 (1.04)	1.02
White	-0.51 (1.90)	-0.07 (0.01)	0.01
Other	0.67 (1.93)	-1.69 (2.21)	5.62
Previously Married	-1.51 (11.83)	-1.27 (4.45)	0.02
Child $\leq$ 10	-0.67 (1.32)	[b]	---
Homeowner	0.18 (0.21)	-0.61 (1.08)	0.73
Age	-0.05 (3.42)	-0.00 (0.00)	0.94
Siblings = 0	0.44 (0.94)	0.65 (0.49)	0.12
Siblings = 2+	-1.27 (11.54)	-0.33 (0.26)	1.39
Market Wage	-0.18 (6.28)	[c]	---
Market Wage Missing	-0.29 (0.15)	[c]	---
Income	[a]	-0.07 (7.99)	---
Income Missing	[a]	0.10 (0.02)	---
Characteristics of Elderly Mothers			
Age	0.12 (13.32)	0.05 (0.01)	1.93
Health	1.21 (12.39)	-0.04 (1.30)	4.84

Note: See Table 2 for variable definitions. X^2 statistics for individual parameters shown in parentheses; X^2 statistics for differences between sons and daughters shown in the third column. $X^2 > 2.69$ (3.84) (6.66) implies significance with p-value < 0.10 (0.05) (0.01) for two-tailed tests. Due to sample size limitations, the power to estimate the observed coefficients is well below 0.80. Caution should be exercised in interpreting nonsignificant results.

[a]Pertains only to adult sons.

[b]Excluded due to small cell frequency.

[c]Pertains only to adult daughters.

TABLE 5

AVERAGE VALUES OF VARIABLES DESCRIBING COUPLES AT RISK FOR CORESIDENCE WITH MOTHERS: AVERAGE OVER TEN IMPUTATIONS
(average sample size = 1,263)

	Couple at Risk for Coresidence with:		
	Wife's Mother	**Husband's Mother**	**Both Mothers**
Characteristics of Couples			
White	0.81	0.79	0.83
Other	0.08	0.09	0.10
Homeowner	0.85	0.81	0.86
Child $\leq$ 10	0.38	0.53	0.24
No Spouse Information	0.13	0.08	0.00
Characteristics of Wives			
Age	47.39	43.80	47.17
Siblings = 0	0.12	0.10	0.08
Market Wage	9.51	9.33	9.53
Market Wage Missing[a]	0.09	0.07	0.06
Characteristics of Wives' Mothers			
Health	0.21	---	0.26
Age	75.69	---	75.19
Characteristics of Husbands			
Siblings = 0	0.11	0.13	0.11
Income (in $1,000s)	24.52	27.61	26.89
Income Missing	0.11	0.11	0.12
Characteristics of Husbands' Mothers			
Health	---	0.18	0.22
Age	---	75.63	76.71
Percent Coresiding	5.97	2.24	5.87[b]

Note: See Table 2 for variable definitions.
[a]Not estimated for women aged 62 and older.
[b]Percent coresiding with either wife's or husband's mother; no instances of coresidence with both mothers were observed.

TABLE 6

LOGISTIC MODEL OF CORESIDENCE BETWEEN COUPLES AND THEIR ELDERLY UNMARRIED MOTHERS

	Coresidence with Wife's Mother	Coresidence with Husband's Mother
Characteristics of Couples		
Intercept	-10.52 (27.57)	-3.99 (1.77)
White	0.57 (0.76)	0.37 (0.18)
Other	0.53 (0.38)	-0.78 (0.29)
Child $\leq$ 10	0.56 (8.18)	-0.01 (0.00)
Homeowner	0.12 (0.07)	0.60 (0.59)
Characteristics of Wives		
Age	-0.04 (1.32)	-0.05 (1.99)
Siblings = 0	0.90 (6.76)	-0.52 (0.31)
Market Wage	-0.16 (3.46)	0.18 (3.96)
Market Wage Missing	-1.48 (2.37)	[c]
Characteristics of Wives' Mothers		
Imputed to be at risk	[a]	-0.43 (0.36)
Health	0.68 (4.75)	[b]
Age	0.11 (14.51)	[b]
Characteristics of Husbands		
Age	0.04 (2.82)	-0.02 (0.23)
Siblings = 0	0.39 (1.02)	1.16 (4.84)
Income	0.00 (0.19)	-0.06 (11.42)
Income Missing	-0.57 (0.98)	-1.55 (3.42)
Characteristics of Husbands' Mothers		
Imputed to be at risk	-0.47 (1.14)	[a]
Health	[b]	1.23 (5.66)
Age	[b]	0.03 (0.38)

Note: See Table 2 for variable definitions. X^2 statistics for individual parameters shown in parentheses. $X^2 >$ 2.69 (3.84) (6.66) implies significance with p-value < 0.10 (0.05) (0.01) for two-tailed tests.

[a]Constrained to equal zero because variable collinear with intercept.

[b]Variables describing mothers are treated as attributes of the choices; see text.

[c]Constrained to equal zero because no cases occupy this cell.

TABLE 7

PREDICTED PROBABILITIES OF CORESIDENCE BETWEEN COUPLES AND MOTHERS BY SIBLING STRUCTURE AND MOTHER'S HEALTH STATUS

	Mother in Poor Health			
Sibling Configuration	**Neither**	**Wife's**	**Husband's**	**Both**
Wife and husband have siblings				
pr(with wife's mother)	.033	.063	.032	.061
pr(with husband's mother)	.013	.012	.043	.041
Wife has no siblings; husband has siblings				
pr(with wife's mother)	.077	.142	.076	.140
pr(with husband's mother)	.007	.007	.025	.023
Wife has siblings; Husband has no siblings				
pr(with wife's mother)	.046	.088	.042	.080
pr(with husband's mother)	.039	.038	.122	.118
Wife and husband have no siblings				
pr(with wife's mother)	.109	.194	.103	.185
pr(with husband's mother)	.022	.020	.072	.065

Note: See Table 2 for variable definitions. In these calculations, the couple is assumed to be White and to own their own home. The wife is assumed to be age 47, with a market wage of $9.00 per hour and a mother age 75 imputed to be at risk for coresidence. The husband is assumed to be age 50, with an annual income of $24,000 and a mother age 77 imputed to be at risk for coresidence.

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Paper No.	Title	Author	Date
1	The Division of Family Labor: Care for Elderly Parents	Wolf, Freedman, and Soldo	August 1995
2	Time? Money? Both? The Allocation of Resources to Older Parents	Couch, Daly, and Wolf	December 1995
3	Coresidence with an Older Mother: The Adult Child's Perspective	Soldo, Wolf, and Freedman	December 1995