HHS Public Access

Author manuscript

Res Aging. Author manuscript; available in PMC 2015 September 01.

Published in final edited form as:

Res Aging. 2014 September ; 36(5): 568–602. doi:10.1177/0164027513510325.

Life Course Changes and Parent-Adult Child Contact

Russell Ward[1], **Glenn Deane**[1], and **Glenna Spitze**[1]

Russell Ward: rward@albany.edu

[1]Department of Sociology, University at Albany, SUNY, Arts and Sciences 329, 1400 Washington Avenue, Albany, New York 12222

Abstract

Despite increased interest in parent-adult child relations, there has been little attention to how these are influenced by changes in their lives, reflecting transitions and linked lives within a life course perspective. Hybrid multi-level models are used to analyze change in parent-adult child contact over two waves of the National Survey of Families and Households. Changes in parent-child proximity, parent and child marital status, and child parental status are associated with change in contact; continued coresidence with another adult child is related to contact with noncoresidential children; but change in parent health does not affect contact. Some patterns are stronger for daughters and biological children, who tend to have stronger relationships with parents. These analyses demonstrate how life course transitions of parents and adult children can be examined in family context to understand how changes in the life of one family member may influence relations with another.

Family theorists have devoted a great deal of debate to how families have changed over time. Some have described both declines in extended family relations with the emergence of the modern nuclear family, and declines in the nuclear family itself (e.g. Lasch, 1977; Popenoe, 1993; see discussion in Bengtson, 2001). Other family scholars, in contrast, have countered these positions with more optimistic conclusions, focusing on the resilience of both nuclear and intergenerational family bonds (e.g. Bengtson, 2001; Bengtson, Biblarz, & Roberts, 2002; Coontz, 1992; Logan and Spitze, 1996). These debates tend to revolve around demographic and social changes that are macro-level but that also play out at the level of individual members including parents and children. Researchers have also asked questions about how intergenerational relationships change over the life course, both with aging of each generation and with the transitions and life events that may be experienced by members of both parents and adult children (e.g. Kaufman and Uhlenberg, 1998; Szinovacz and Davey, 2007).

One approach to investigating change in parent-adult child relations over the life course examines age-related patterns. Although parents generally give more assistance to adult children than they receive, support from parents declines after children are in young adulthood, and at more advanced ages parents tend to receive more than they give (Bengtson & Harrotyan, 1994; Cooney & Uhlenberg, 1992; Logan & Spitze, 1996). Such studies provide suggestive evidence as to how parent-adult child relations may change over time in response to life course events and transitions in parents' or adult children's lives. However, there is only limited direct evidence about change in parent-adult child relations in

individual families (Merrill, 2011; Shapiro, 2003; Szinovacz & Davey, 2007), in part because few data sets combine a longitudinal design with detailed information on these relationships. Much of that limited research has focused on changes in assistance or caregiving (e.g. Silverstein, 1995; Silverstein, Gans, & Yang, 2006; Silverstein, Parrot, & Bengtson, 1995).

We contribute to that literature by examining how in-person contact between parents and their individual adult children responds to changes in their statuses and characteristics. Visiting between parents and adult children, the predominant focus of previous research on parent-adult child contact, has been viewed as an important dimension of intergenerational solidarity (Rossi & Rossi, 1990; Silverstein & Bengtson, 1997). Further, Kalmijn (2006: 2) has suggested that face-to-face contact is a "good indirect measure of intergenerational support," as it is related to other dimensions of parent-adult child relations such as exchange of expressive (e.g., Lawton, 1994) and instrumental support (e.g., Rossi & Rossi, 1990). Some forms of instrumental support can only be provided in person.

Of course, contact between parents and (non-coresident) adult children may occur through other means, such as telephone, letters, or more recently various social media. But these alternate forms of contact have been shown to relate to each other. For example, frequency of visiting and phoning are positively correlated (Rossi and Rossi, 1990), exhibit very similar patterns of frequency (Kalmijn, 2006; see also Lye et al., 1995), and have similar predictors (Greenwall and Bengtson, 1997; Rossi and Rossi, 1990; Sarkisian and Gerstel, 2008). Treas and Gubernskaya (2012) indicate that although technological changes may make distance less of an impediment to parent-child contact, their analysis of patterns of maternal contact from 1986 to 2001 in seven countries found similar trends for face-to-face and "other" contact, with increases in "other" contact in only two of the countries.

Thus, our focus reflects the centrality of in-person contact in relation to other dimensions of parent-adult child relations, as arguably the most basic and significant form of contact. By examining changes in these contacts, we will contribute to a broader understanding of how other forms of contact and intergenerational support may vary in response to life events.

Further, while much past research has analyzed single parent-child dyads (e.g., Logan & Spitze, 1996; Rossi & Rossi, 1990) or parent reports of aggregated relations with adult children (e.g., Crimmins & Ingegneri, 1990; Shapiro, 2003), our recent work has examined contact and support within the context of all parent-child relations in a family (e.g. Deane et al., 2009; Spitze et al., 2012). Here we extend such work to a longitudinal view of changes in parent-adult child relations. We use multi-level models to *simultaneously* examine contact between parents and each of their adult children, controlling for those adult children's characteristics. We assess changes in parent-adult child contact between Waves 1 and 2 of the National Survey of Families and Households (NSFH), in response to changes in parents' health, marital status, and coresidential status as well as children's marital and parental status and their joint spatial proximity. We also examine whether any such effects vary by two unchanging characteristics of individual adult children, their gender and their biological/step relationship to the parent respondent. In the following, we review the limited literature examining change in intergenerational relationships. We then review cross-sectional

evidence on effects of our focal predictors of contact, and of other variables to be used as controls, and present the research questions that guide our analysis.

Review of Previous Literature

Changes in Intergenerational Relationships

Our modeling of the implications of change for parent-adult child relations is guided by two conceptual frameworks: intergenerational dimensions of solidarity and the life course perspective. Silverstein and Bengtson (1997; also see Bengtson & Roberts, 1991; Bengtson et al., 2002) have described six dimensions of solidarity and their interrelations: structure, association, affection, consensus, functional, and normative. Their intent is partly to counter a "family decline hypothesis" that has asserted a weakening of family ties (see Bengtson, 2001), as their research indicates continued strength across the dimensions. (It should be noted that others have suggested this approach gives too little attention to conflict and ambivalence in parent-child relations; e.g. see Luescher & Pillemer, 1998; Ward, Spitze, & Deane, 2009.) We focus here on associational (contact) and structural (e.g., proximity) dimensions of parent-adult child relations, while also noting their implications for affectual and functional dimensions.

Our focus on change within families corresponds with two central dimensions of a life course perspective: transitions and linked lives (Elder & Johnson, 2003). These concepts remind us that parents and children are interdependent throughout their increasingly long lives and relationships with each other, and that individual lives and changes occur within a family context. Transitions experienced by one person will have influences on others, in part by altering their relationship (Connidis, 2010). For example, changes in a parent's health or marital status, or in a child's marital or parental status, may affect the other and their relations. This may be due to changing needs and assistance patterns, or to changes in parent-adult child closeness (in distance or emotional ties); for example, parent-child closeness may be enhanced as children move into adult roles so that parents and children become more similar in their statuses and circumstances (Aquilino, 1997; Merrill, 2011; Pillemer & Suitor, 2002). Further, the implications of change for a particular parent or child may depend on the broader family context; for example, one child's response to parent assistance needs will be shaped by the availability of siblings (e.g., Spitze et al., 2012).

Some recent studies have addressed patterns of change in helping and caregiving networks, conceptualized by Bengtson and colleagues as functional solidarity. They have found change in primary caregivers, in both initiating and ending adult children's caregiving responsibilities, and in the size and composition of care networks over time (Dwyer et al., 1992; Jette, Tennstedt, & Branch, 1992; Szinovacz & Davey, 2007). Other studies have investigated change in more general patterns of support. Merz, Schuengel, and Schulze (2009) found that both emotional and instrumental support to parents increased over time in the Netherlands Kinship Panel Study. Studies by Silverstein and colleagues, using the Longitudinal Study of Aging (LSOG) have found that changes in support are affected by parent health and widowhood (Silverstein, Parrot, & Bengtson, 1995), that changes in adult child proximity (moving nearer to parents) are associated with worse parent health and widowhood (Silverstein, 1995), and that change in support to aging parents is predicted by

change in parent functional impairment and by whether the mother stayed unmarried or became widowed (Silverstein, Gans, & Yang, 2006). Thus, changes in parent health and marital status appear to elicit change in support from adult children, suggesting adjustment by children to changing parental need.

A few studies of longitudinal change have focused on quality of relations or contact. Kaufman and Uhlenberg (1998), using the National Survey of Families and Households, found that improved parent health yielded improved relations, whereas health declines led to lower quality of relations. Parental divorce also resulted in decline in parent-adult child relations, particularly with the father. If a parent was widowed, the relationship with an opposite-sex parent declined, but that between daughters and widowed mothers improved. Merz et al. (2009), using the Netherlands Kinship Panel Study, also found that parent health was positively related to parent-adult child quality over time. In one of the very few longitudinal studies analyzing contact, our focus here, Silverstein et al. (1995) found no effect of parent health or widowhood on contact over three years for parent-adult child dyads for LSOG families. Shapiro (2003), using aggregated measures, found divorce did not affect distance but reduced fathers' contact with adult children over two waves of the NSFH. Finally, two studies used the first two waves of the NSFH to examine change in contact: Szinovacz and Davey (2001) found effects of parents' retirement on contact with adult children varied with both proximity and parent gender, while Musick and Bumpass (2012) reported that adult children reduced contact with parents when they entered marital or cohabiting unions.

In sum, limited studies have analyzed change in parent-adult child relations within individual families. Most focus on functional solidarity (caregiving and other support) or affective quality of parent-child relations. A few examine changes in contact. The primary focus has been changes in parent health or marital status, though one study examined changes in adult children's marital status and one looked at parents' transition to retirement. We now turn to cross-sectional evidence on predictors of parent-adult child contact.

Past cross-sectional evidence for key predictors

The key predictors for our analysis of change are: parent-adult child proximity; parent health, marital status, and coresidential status with any adult child; and adult child's marital and parental status. Although our analysis will examine effects of changes in parent and child circumstances between waves, here we review implications of cross-sectional literature for our predictors. We also discuss previous findings for children's gender and biological/stepchild status, as background for our tests of interaction effects between these unchanging adult child characteristics and parent and child life course transitions.

Parent-adult child spatial proximity, a key structural factor with implications for other dimensions of parent-adult child solidarity, is perhaps the strongest predictor of contact (e.g., Crimmins & Ingegneri, 1990; Deane et al., 2009; Hank, 2007; Greenwall & Bengtson, 1997), whether the focus is on adult children with living parents (e.g. Kalmijn, 2006; Lawton et al., 1994; Sarkisian & Gerstel, 2008; Waite & Harrison, 1992), parents and a particular child (e.g. Logan & Spitze, 1996; Rossi & Rossi, 1990), or parents and the most proximate child (Crimmins & Ingegneri, 1990; Hank, 2007). Although the role of proximity

in determining contact might be presumed, we provide new evidence as to how varying degrees of proximity influence relationships. Within that context, we look at the implications of change in proximity along with other transitions in the lives of parents and adult children, and on how any effects of such changes may vary by characteristics of adult children.

Parental health has yielded mixed results. Longitudinal analyses suggest increasing support and proximity related to declining parent health, as noted above. Cross-sectional analyses have found quality of parent-adult child relations to be associated with better health (Kaufman & Uhlenberg, 1998; Uhlenberg & Cooney, 1990; Ward, Spitze, & Deane, 2009). Hank (2007), in a multi-national European study, found that having chronic health conditions was associated with greater contact with the most-frequently seen child. However, other studies have found little or no association between parent health and visiting with adult children (Crimmins & Ingegneri, 1990; Greenwell & Bengtson, 1997; Logan & Spitze, 1996; Rossi & Rossi, 1990; Waite & Harrison, 1992).

Parental marital status has also been found to affect intergenerational relations in longitudinal studies (above) and in cross-sectional analyses, but with complex patterns. Divorce is associated with lower quality and less contact, especially for fathers (Bulcroft & Bulcroft, 1991; Kaufman & Uhlenberg, 1998; Lawton, Silverstein, & Bengtson, 1994; Logan & Spitze, 1996; Lye, 1996; Silverstein & Bengtson, 1997; Umberson, 1992). Ward et al. (2009) found that being married is associated with greater contact with adult children, especially for fathers. Waite and Harrison (1992) reported middle-aged women to have greater contact with their children (and with their own parents) if they were married. However, other research has found no relationship between contact with adult children and whether parents were married (Greenwell & Bengtson, 1997) or widowed (Crimmins & Ingegneri, 1990; Lye, 1996; Umberson, 1992).

Studies have found little association between *coresidence by a parent with an adult child* and contact or support patterns with noncoresident children (Deane et al., 2009; Spitze et al., 2012; Umberson, 1992). These have taken a cross-sectional view, however; the increased strain and parental dissatisfaction associated with coresidence, as noted by Umberson, may have an effect on parent-adult child contact over time. Studies have shown such coresidence to occur predominantly in parental households in response to the needs of adult children (see reviews in Ward and Spitze, 1992; 1996).

The *marital and parental status of adult children* may influence parent-adult child contact, perhaps by affecting quality of their relations. Studies suggest higher relationship quality when children have children (Lye, 1996) and lower quality with unmarried children (Kaufman & Uhlenberg, 1998), but evidence on their implications for contact is mixed. Married children have less contact with parents (Sarkisian & Gerstel, 2008), and divorced daughters who have custody of their own children see parents more (Spitze et al., 1994). However, Deane et al. (2009) found no association between child marital status and visiting with parents. In terms of children's parental status, Merrill (2011) found that adult children may have less time for interaction with parents once grandchildren were born, though "shared motherhood" may bring mothers and daughters closer together. Logan and Spitze

(1996) reported no association between having a grandchild and parent-adult child contact, but Deane et al. (2009) found that presence of a grandchild was associated with more visiting.

Research suggests that patterns of parent-adult child contact vary for sons and daughters and for biological and stepchildren. Logan and Spitze (1996) note that gender differences in parent-child relations are not necessarily straightforward, but women have been described as kinkeepers who express stronger obligations, maintain family ties, and are most involved in assistance and caregiving (Bengtson, Rosenthal, & Burton, 1990; Logan & Spitze, 1996; Lye, 1996; Moen, 1996; Silverstein & Bengtson, 1997). There are also indications of more contact by daughters and mothers (Deane et al., 2009; Silverstein & Bengtson; 1997; Umberson, 1992). Further, implications of life course changes may differ for sons and daughters. Merrill (2011), for example, has suggested that relations with daughters may improve after they marry, whereas relations with sons may worsen as their priorities change after marriage. Given these patterns of differences in cross-sectional research, we examine whether life course transitions experienced by parents or adult children might vary in their effects on relations with sons versus daughters.

Research has also found variation in parent-child relations between *biological and stepchildren*. There tend to be more strained relations (Ganong & Coleman, 2006; Rossi & Rossi, 1990) and fewer normative obligations (Aquilino, 2005; Ganong & Coleman, 2006; Ward & Spitze, 2007) between adult stepchildren and stepparents; these may reflect family instability and disruption (Ganong & Coleman, 2004; Sweeney, 2007). These patterns contribute to weaker ties and less contact between stepparents and adult stepchildren than with biological/adopted children (Ganong & Coleman, 2006; Ward & Spitze, 2007; Ward et al., 2009). Again, we question whether life course transitions of parents or adult children may have varied consequences depending upon whether the adult child is a biological/adopted child of the parent respondent or whether there is a stepchild relationship, perhaps of shorter duration.

Past cross-sectional evidence for control variables

Our control variables include number of siblings in the family, and parent's age, sex, race, and educational level. *Number of adult child siblings* is related to less contact with a particular adult child, but to more contact with adult children overall (Crimmins & Ingegneri, 1990; Deane et al., 2009; Logan & Spitze, 1996; Treas & Gubernskaya, 2012). Ward et al. (2009; also Ward, 2008) found that having more adult children led to increased differentiation across children on both contact and reported quality of relations (also Shapiro, 2003). Adult children with more siblings experienced less frequent visits with parents (Sarkisian & Gerstel, 2008), although Logan and Spitze (1996) found this for adult daughters only.

Older parents may see children more often (Umberson, 1992), particularly daughters (Logan and Spitze, 1996). *Black and Hispanic* families have been assumed to have stronger intergenerational ties, but findings are mixed for contact (Lawton et al., 1994; Umberson, 1992); it remains unclear whether race affects family solidarity (e.g. Hogan, Eggebeen, & Clogg, 1993; Silverstein & Waite, 1993). Better-educated parents visit with children less

often (Crimmins & Ingegneri, 1990; Lawton et al., 1994; Spitze et al., 1994; but see Umberson, 1992).

Research Questions

Studies of parent-adult child relations have largely focused on aggregate measures, or on a single parent-adult child dyad per family, due to a lack of available data across adult children and/or of suitable analytic techniques. Our previous research has used innovative modeling techniques to analyze relationships between parents and each adult child in family context (Deane et al., 2009; Spitze et al., 2012). Here we extend that work in a longitudinal context, guided by research questions that address *change* in parent-adult child relations in the context of a *family network*. We pose questions about how changes in key characteristics of parents and adult children affect contact between parents and those particular adult children, controlling for earlier contact levels. We also examine whether any effects vary by the gender or biological/stepchild status of adult children, given the cross-sectional associations between those two unchanging characteristics and patterns of contact.

Specific research questions include the following. *First* do changes in parent circumstances, including health, marital status, or coresidential status (with any adult child), affect contact between a parent and that child? How do changes in proximity between parents and adult children, or in an adult child's marital or parental status, affect contact?

Second, do effects of changes in any of these parent or child characteristics vary by gender or stepchild status of adult children? We suggest that the effects of change in parent or child circumstances on their relationship may be more pronounced for relationships involving more frequent contact, as for daughters and biological children.

Data and Methods

Sample

Data are from the first two waves of the National Survey of Families and Households, collected in 1987–88 and 1992–93 (Sweet and Bumpass 1996). The first wave was a national probability sample of 13,017 persons (primary respondents) aged 19 and over, representing the noninstitutionalized U.S. population, with oversampling of some groups (e.g., Blacks and Hispanics and certain household types); 77% of primary Rs were reinterviewed at wave 2. For the analyses reported here we selected parents who had at least one noncoresident adult child (aged 19+). This reduces the number of eligible parent respondents to 3,604 at Wave 1, with a total of 9,474 adult children; of these, 2,414 parent respondents (67% of Wave 1) with 6,045 adult children were followed up in Wave 2.

Unweighted data are used in our analyses. We account for NSFH's complex survey design in our analyses via inclusion of the variables defining the sampling design (Korn and Graubard, 1991; Winship and Radbill, 1994; see also discussion of this approach in analyses of NSFH by Johnson and Elliott, 1998). The data file is organized with adult children as the units. The families we thus construct have from one to eight noncoresident adult children. Due to the small number of very large families and our estimation of unstructured within-

family error covariances, children listed ninth and higher were excluded from our analyses. This does not eliminate any families and loses only 20 cases (i.e. adult children).

Dependent Variable

NSFH data include parent reports of relations with each of their children. We focus on change between waves in reported associational solidarity: frequency of visiting with each noncoresident adult child: parents reported "During the last 12 months, how often did you see (child)?" (1 = "not at all", 2 = "about once a year", 3 = "several times a year", 4 = "one to three times a month", 5 = "about once a week", 6 = "several times a week"). Approximately one-fourth of parents live in the same household with an adult child, with the overwhelming majority of coresidence occuring in the parental household. The NSFH treats contact with coresident children as "not applicable;" however, we control for the presence of coresident adult children because of its potential impact on contact with noncoresident siblings. The NSFH also does not identify the motivator or location of contact (i.e., whether parent or child initiated the contact and where visits occurred).

Independent Variables

Independent variables include characteristics of the parent, the particular adult child, and the family. Parent characteristics include: age, gender (1 = female), race (dummy variables identifying Black and Hispanic), marital status, education (# of years) as an indicator of social class, and health (self-reported: 1 = very poor to 5 = excellent). Characteristics of individual adult children include gender (1 = female), whether biological/adopted or stepchild (1 = biological/adopted), marital status, and parental status; parent respondents also reported "how many miles away from here" each child lived. Family characteristics include respondent's number of children and whether an adult child coresides in the parent's household (1 = yes).

Our research questions focus on the implications of change between waves in key parent and adult child characteristics and situations: parent marital status and health, adult child marital status and proximity, whether an adult child has a first child (grandchild) between waves, and whether there is a change in parent-adult child coresidence (an adult child or parent moving in or out of a household). We also investigate whether the effects of such changes vary by child gender and for biological versus stepchildren. Table 1 provides summary descriptive statistics for sample characteristics and variables, including the categorization of parent and adult child changes between waves.

We subtract Wave 1 from Wave 2 frequency to measure change in contact; frequencies, ranging from −5 to +5, are reported in Table 1. Almost 45% of parents report no change in contact, while more report a decrease (32.5%) than an increase (22.9%); mean visiting declined from 4.07 to 3.90 (on scale from 1 = "not at all" to 6 = "several times a week").

Parent/family Characteristics

Parent/family characteristics are reported in Table 1. Those assumed not to change (or, for age, to change by a constant) include: parent age (mean = 57.6 years in Wave 1; with a median of 57 years and 25th and 75th percentiles of 49 and 66, respectively); education

(mean = 11.7 years); and gender (66.7% female). Parent race/ethnicity is coded as dummy variables for Black and Hispanic (non-Hispanic White the omitted category); 15.1 % were Black, 4.6% were Hispanic. Parents also reported number of children in the family.

Parents' marital status was coded in five categories (married, separated, divorced, widowed, never married), but for simplicity we create a six category measure of change. A majority (52.6%) were married in both waves or not married in both waves (35.7%). The most common change was married to widowed (5.6%). Parent health most often remained the same between waves (55.4%). It was more likely to worsen (27.5%) than to improve (17%). Most parents had no coresident adult child in either wave (60.6%) or had such a child in both waves (19.4%). They were more likely to move from coresidence to noncoresidence (14.9%) than the reverse (5.1%).

Adult Child Characteristics

Adult child characteristics include age (mean = 33.2 years in Wave 1); gender (50.8% female); and biological/adopted versus stepchild status (8% were stepchildren of the primary respondent). Children's marital status is coded as unmarried or married for each wave. The majority were married (57.1%) or not married (21.8%) in both waves. Slightly more became married (12.4%) than unmarried (8.8%). The variable "presence of grandchildren" reflects whether each adult child had any children; 67.4% had a child in both waves, while 20.1% had no children in either wave. Some became parents between waves (12.4%), while a very small number were recorded as becoming nonparents; we code the latter in the "have a grandchild" category, not knowing whether these cases reflect children's death or coding error.

Parents reported "how many miles away from here" each child lived. We analyzed a number of codings for our change variable, including a simple difference (which was unduly influenced by large values) and several cutpoints for categorical distance. We decided to code distance in three categories, reflecting likely travel time and residence in the same MSA: close (up to 25 miles apart); middle (26–100 miles apart); and far (over 100 miles). This yielded nine categories of change in distance. The large majority remained in the same category (51.3% close; 3.1% middle; 28.5% far), while the most common change categories were "close to far" (6%) and "far to close" (4.9%).

Analytic Models

Our particular interest is whether changes in parent, family, or adult child attributes are associated with change in the frequency of parent-child contact. When two or more measurements on a dependent variable are available, and key independent variables are time-varying, a fixed effects method can get causal inference in observational studies much closer to inference in experimental designs than conventional methods for statistically controlling for characteristics of subjects – so long as the effects of unmeasured characteristics do not change over time. The essence of a fixed effects method is in its exclusive focus on within-person variation; a characteristic that is shared by experimental designs. Although restricting attention to within-subject variation greatly improves our ability to get unbiased estimates, fixed effects methods cannot estimate coefficients for

attributes that have no (or little) within-subject variation. Random effects methods, on the other hand, allow estimates for time-invariant variables while adjusting for the within-person correlation in repeated measures of the dependent variable that would inflate estimated standard errors and bias inference in conventional regression analysis. Although almost all of our independent variables are either time-invariant or treated as time-invariant due to categorical coding, we utilize, and extend, a hybrid random effects model, derived by Allison (2005), which retains the strong causal inference properties of fixed effects methods for time-varying variables with the ability of random effects methods to estimate the between-subject effects of time-invariant variables and their conditioning effect on the change component of the dependent variable.

The general form of our three-level model decomposes within- and between-person variance by nesting time (indexed by *t*) within individuals (that is, adult children indexed by *i*) within families (indexed by *j*):

$$y_{ijt}=\mu_t+\lambda_i t_{it}+\pi_j t_{jt}+\beta x_{it}+\delta x_{jt}+\gamma_t z_i+\eta_t w_j+\alpha_i+\theta_j+\varepsilon_{ijt} \quad \text{with } i=1,\ldots,n; j=1,\ldots,m; \text{and } t=1,\ldots,T \qquad \text{eq. 1}$$

where x_{it}, x_{jt}, z_i, and w_j are time-varying individual-level, time-varying family-level, time-invariant individual-level, and time-invariant family-level covariates, respectively; μ_t is an intercept that is allowed to vary with time; λ_i and π_j allow time to be treated as individual-specific and family-specific random coefficients; β and δ are (fixed) coefficients for time-varying individual- and family- level covariates, respectively; γ_t and η_t are time-varying coefficients for time-invariant individual- and family- level variables; ε_{ijt} is a random disturbance term; and α_i and θ_j are random effects that vary over individuals and over families that are assumed to follow a normal distribution with a mean of 0 and constant variance, and are independent of z_i, w_j, x_{it}, x_{jt}, and ε_{ijt}.

A number of attractive and consequential features of the hybrid model can be matched to the terms in eq. 1. Most importantly in our application, the *t* subscripts on γ and η represent the flexibility to treat time-invariant variables from within the fixed effects framework via time-varying coefficients. These coefficients (which result from interactions between time-invariant variables with time) allow the effect of time to vary with level of the time-invariant covariate.

To illustrate our approach we begin with a model in which the decomposition of *y* is based solely on person-specific and family-specific differencing plus the effect of time. The fixed effects in Model 1 of Table 2 show that the average level of visiting in Wave 1 was 4.07 (see "Constant"), declining to 3.90 in Wave 2 (see the "Time" coefficient estimate of −0.17 in Model 1 in Table 2).

Results

Model 2 in Table 2 presents results of our full model for the first research question: Do changes in proximity of parent and adult child, parent health, marital status, and coresidence status, and adult child marital and parental status affect changes in frequency of parent-adult child contact? We apply a hybrid method of fixed and random effects to incorporate both

changing and time-invariant variables (such as gender, race/ethnicity, parents' education, and biological relationship). For time-varying covariates, the coefficients labeled as "deviation from average" give the fixed effects estimates. For time-invariant covariates and categorical coding of selected time-varying variables (parent and child marital status, presence of one or more coresident adult child, addition of a grandchild, and distance between parent and child), statistically significant interactions with time show the associations of these variables with change in contact from Wave 1 to Wave 2. Only statistically significant interactions with time are retained; variables without time interactions show the association with Wave 1 level of contact and indicate that they are unrelated to change in visiting.

The coefficient for time (−0.16) indicates that, net of other variables in the model, there was a small but not significant decline in the frequency of contact from Wave 1 to Wave 2 (here and below we refer to coefficients highlighted by bold and underlining in Table 2).

We turn now to the implications of changing parent and adult child characteristics (see interaction with time coefficients (X * time in Table 2). Consistent with prior cross-sectional research on spatial proximity and level of contact, distance between parent and adult child and changes in proximity have implications for changes in parent-adult child contact. Living nearer and moving nearer, especially moving from "far" to "close", as we have defined these, are related to increased contact in comparison to parent-adult child dyads which were close at both waves (e.g., for far to close the increase is 2.27 versus an increase of 0.69 for middle to close). Living further away, especially moving from "close" to "far", is related to decreased contact (e.g., staying close decreases contact by −.24, while the decrease for close to middle and close to far is −.71 and −1.93, respectively). Remaining far and remaining close do not differ in patterns of contact change.

Other changes experienced by parents and adult children also have implications for their changing contact. For parent marital status, compared to those who were married at both waves, married parents who became separated or divorced had a greater decline in contact (−0.27), suggesting a weakening or disruption of parent-child relations; other marital status conditions were not related to changes in contact. Changes in parent health were not related to change in contact. Compared with parents not coresiding with an adult child at both waves, those who were coresident at both waves had decreased contact (−0.17); but transitions into and out of coresidence were not related to change in contact with noncoresident adult children. For child marital status, parents had less contact with children who became married compared with children who were married at both waves (−0.11), suggesting that marriage deflects children from involvement with parents. Parents had increased contact with adult children who became parents between waves (and to a lesser extent with children who were not parents at either wave) compared with those who were parents at both waves (0.17 and 0.09, respectively), suggesting that becoming a grandparent stimulates contact with adult children, but this may dissipate some over time.

Among control variables, parent age and race/ethnicity are not related to contact; contact was higher for mothers compared with fathers (0.12) and for parents with more education (0.01), and was lower (with a particular child) for parents with more children (−0.05).

Contact was higher for biological versus stepchildren (0.41) and for daughters compared with sons (0.12), and contact increased for daughters after Wave 1 (0.08).

Our second set of research questions ask whether the associations between change in contact and selected parent or child characteristics vary by child gender or biological/stepchild status. We assessed this through 3-way interactions of 1) child gender or biological/stepchild status with 2) parental and adult child marital status, parents' health, coresidence, grandchildren, and parent-adult child distance and with 3) time. Table 3 summarizes the results of those analyses. We note interactions that modify the main effects reported above.

Most of the three-way interactions were found to be not significant. This is itself of interest; for example, the implications of changes in parent health or in child marital status, do not appear to be different for daughters and sons, or for biological and stepchildren. There is variation in the implications for change in parents' marital status from widowed to married by child gender. In the main model (Model 2 of Table 2), the interaction of time with Wave 1 widowed parents who marry between Waves 1 and 2 shows that the frequency of visits for these parents increases by about two-tenths of a point (0.22) between Wave 1 to Wave 2; this is not significant controlling for other parent-, family-, and child-characteristics included in our model specification. We can think of this as the average change for this parental marital status, but Model 1 of Table 3 allows this change to differ for sons and daughters. The result of this disaggregation reveals that parents report an increase in frequency of visits with sons of almost half of a point (0.46), controlling for other characteristics, while frequency of visits with daughters decreases by thirteen-hundredths of a point (0.46 – 0.59 = −0.13) between Waves 1 and 2 for widowed parents who married. In other words, the non-significant change in frequency of visits given in Model 2 of Table 2 is the result of averaging a substantial positive increase with sons with a more modest but negative change with daughters.

A similar interpretation applies to other significant interactions in Table 3. There was a significant difference in the effect of not having a child (grandchild) at either wave (compared with those who had a child at both waves) by biological/stepchild status: this was related to increased contact with biological children (0.26 – 0.14 = 0.12), but to reduced contact with stepchildren (−0.14). There are also some significant interactions involving distance: daughters exhibited a greater decline in contact than sons when moving from "close" to "far;" for biological children, moving from "far" to "close" had a stronger positive association and moving from "middle" to "far" had a weaker negative association; but otherwise the effects of residential mobility do not differ by gender and biological/stepchild status. We highlight the relevant main effects and interaction effects (bold and underlined) in the models of Table 3.

Discussion

In contrast to the predictions of "family decline" theorists, scholars who study intergenerational relationships have found significant ongoing solidarity between parents and their adult children (e.g., Bengtson et al., 2002; Logan and Spitze, 1996). However, relatively few studies have analyzed actual change in relations between parents and adult

children within families, and most of those studies focus on functional (assistance or caregiving) or affectual solidarity. In particular, there has been little attention to how life course changes of parents and adult children affect solidarity within families. We address these questions by examining how in-person visiting (associational solidarity) between parents and adult children responds to changes in their statuses and characteristics, using waves 1 and 2 of the NSFH. Multi-level models are used to simultaneously examine changes in contact between parents and each of their adult children.

We find that overall contact declined modestly over 5–7 years but the decrease was not significant after controls. Thus, there is largely aggregate stability over that time span. Further, rather than cultural shifts in the significance of family ties, changes reflect aging and life course experiences that were the focus of our research questions.

Our first research question asked how changes in the life course circumstances of parents and adult children affect their in-person contact. We find that changes in proximity, in parent and child marital status, and in child parental status have implications for parent-adult child contact. Change in parent health does not affect contact in our analyses, and although continuing coresidence with another adult child is related to less contact with noncoresident children, changes in coresidence status do not appear to affect contact.

Our second research question examined whether effects of changes in parent or child characteristics vary by two unchanging characteristics of adult children, their gender and their biological/stepchild status. Patterns are mostly similar for daughters and sons, and for biological and stepchildren, but there are some indications that the effects of changes in parent and adult child circumstances are stronger for daughters and for biological children. Below we discuss these patterns in more detail, placing them in the context of existing literature.

Our analysis captures two central concepts in the life course perspective: transitions and linked lives. Two of the transitions we examine involve dimensions of structural solidarity in families, parent-adult child proximity and parent-adult child coresidence. As in our previous cross-sectional work and much of the literature, we find proximity to be central and to produce the strongest effects. Parents and adult children see each other more often when the distance between them decreases, and less when the distance increases. Interestingly, daughters exhibited a greater decline in contact when distance from parents increased. Merrill (2011) has suggested that although sons tend to live further from parents, greater distance may reflect poorer relations and greater ambivalence more for daughters than for sons. It may also be that nearby daughters have greater contact than nearby sons, so daughters' moves may show a greater effect. We also find that moves leading to decreased distance promote more contact for biological than step children, while increased distance is less disruptive of contact with biological children. As noted in the introductory discussion, relations with parents tend to be weaker with stepchildren than with biological children. Our findings reflect this, as biological children appear to be more motivated to maintain contact with parents such that moving closer facilitates contact and moving further is less disruptive of contact compared with stepchildren.

Of course, change in distance could occur due to residential mobility by either the parent or the adult child or both. While we are able to measure changes in distance and changes in frequency of contact, we do not know which occurs first and through what mechanism. The implications of other life course events discussed below, such as marriage, may partly operate through their effects on distance. Parents or children may also move closer due to a desire for more contact or a need to provide/receive types of support that require contact, or they may move for other reasons and subsequently find contact more or less convenient.

We find that continued coresidence by a parent with an adult child (compared to continued noncoresidence) decreases contact with other adult children. Cross-sectional studies have found no association between coresidence and contact with noncoresident children (Deane et al., 2009; Spitze et al., 2012; Umberson, 1992), but our longitudinal view may reflect strain and parental dissatisfaction noted by Umberson that becomes more evident when coresidence continues as a longer-term arrangement. We do not find, however, that transitions into or out of coresidence affect contact with noncoresident adult children. Although coresidence predominantly involves children living in a parental household, implications of coresidence for contact with noncoresident children may depend on whose household it is; this might be addressed in future research focusing on coresidence patterns.

Of the other transitions examined, we find that parents who separate or divorce experience decreased contact with adult children. This is consistent with Shapiro's (2003) findings for fathers, and Kaufman and Uhlenberg's (1998) results for decline in quality of relations. However, we find no change in contact in response to parental widowhood. This is consistent with findings that contact is not related to parents' current widowed status (Crimmins & Ingegeneri, 1990; Silverstein et al., 1995; Umberson, 1992). There is some evidence that parents' widowhood may lead to increased assistance (Silverstein et al., 2006) or may affect quality of relations with children (Kaufman and Uhlenberg, 1998), but these studies did not investigate contact. Thus, consequences of changes in parents' marital status may vary by the transition and the dimension of their relationship being examined. We also find that widowed parents who marry between waves experience an increase in contact with sons and a decrease with daughters. It is possible that daughters feel a decreased need to support remarried parents.

Our finding that parental health changes do not lead to changes in contact is also consistent with cross-sectional findings of little association between parent health and visiting (Crimmins & Ingegneri, 1990; Greenwell & Bengtson, 1997; Logan & Spitze, 1996; Rossi & Rossi, 1990; Waite & Harrison, 1992). Hank's (2007) cross-sectional analysis found chronic conditions associated with greater contact with the most frequently seen child. Others have found increased support from children with parents' increased functional impairment (Silverstein et al. 2006), and better quality of relations with children with parents' improved health (Kaufman & Uhlenberg, 1998; Merz et al., 2009). These mixed results suggest countervailing consequences of parental health changes. Worse health may lead to more support and thus more contact, but worse health may also reduce the quality of relations and thereby lower contact. Thus, the net result could appear to represent no change.

We examine two life course transitions among adult children that lead to changes in intergenerational relationships. An adult child's change from unmarried to married yields less contact with parents (compared to those who are married in both waves), consistent with Musick and Bumpass's (2012) findings for children's entry into marriage/cohabitation. This also reflects Sarkisian and Gerstel's (2008) view of marriage as a "greedy institution," in which the emphasis on spousal relations deflects involvement in intergenerational relations with parents. Merrill (2011) has suggested that a son's marriage may weaken relations with parents but that marriage may strengthen relations for daughters, but we do not find a significant gender difference in the implications of child marital change.

We also examine an adult child's transition to parenthood, which leads to more contact with the grandparents. The comparison group is adult children who are parents in both waves, and we find that adult children who remain non-parents also have slightly more contact with their parents, particularly biological as compared to stepchildren. The birth of a grandchild may stimulate contact with the new grandparents, but the new-parent adult children may later reduce involvement with their own parents as they become more involved in their parental responsibilities. Merrill (2011) has suggested that grandchildren may weaken parent ties, though they may make mother/daughter ties closer; we do not find a gender difference.

There are limitations of our analysis, including those of time and place. Our "average" parent respondent (born about 1930) had children during the 1946–1964 Baby Boom. Larger families in the sample (26% with 5 or more children) are reflective of higher fertility among Baby Boomers (Ahlberg & DeVita, 1992; Fingerman et al., 2012), as well as "blended" families of older remarried parents. However, the median number of children in the sample is 3, and there is a range of cohorts, with parents born across five decades. Thus, the sample includes not only the Baby Boomers, but also cohorts before and after them which had lower fertility. However, we do use somewhat older survey data. Patterns of contact may differ some for the most recent cohorts that are not represented, reflecting different choices in marriage and family that yield different life trajectories; for example, Treas and Gubernskaya (2012) suggest reduced fertility may lead to greater contact with older parents. It may also be that sibling contact has greater influence in smaller families, and patterns may differ some in recent smaller cohorts. We did find greater contact with parents for adult children in smaller families; however, our analyses did not find evidence that number of children affects change in contact.

Another consideration regarding recent cohort patterns involves coresidence by parents and adult children. We found that coresidence was related to less contact with noncoresident children, though transitions into and out of coresidence were not related to change in contact. The prevalence of coresidence increased in the 1980s and 1990s (Goldscheider & Goldscheider, 1994) and that trend appears to have continued into the 2000s (Parker, 2012), reflecting economic difficulties. An increased prevalence of coresidence may have implications for more recent patterns of intergenerational relations.

From a family-stage perspective, it can also be noted that the "average" family (at Wave 1) entailed middle-aged parents and relatively young adult children (mean ages of 57 for parents, 33 for children), though there is a substantial range in ages and the parents and

children were 4–6 years older at Wave 2. We did not find that parent age was related to contact, but an older sample might exhibit greater instability in patterns of contact and some differences in the role of predictors as parents have greater needs and situations of children change with age.

The five-to-seven year span between waves also limited the amount of change in contact and in key predictors such as change in parent or child marital status. A longer view, yielding greater change and variability, may yield stronger patterns of association.

Our data also represent the U.S. context. Patterns may differ in other countries, reflecting different filial norms or patterns of proximity and mobility. There may be more frequent contact in Europe (Hank, 2007; Kalmijn, 2006), for example, perhaps partly because U.S. families are likely to be spread over longer distances. But like the U.S., studies have found little evidence of decline in parent-adult child solidarity in a variety of Western countries (Kalmijn & deVries, 2009; Treas & Gubernskaya, 2012).

In addition, we have focused on face-to-face visiting. Future research will be able to examine changes in other, newer forms of contact (from e-mail to social media) which have only very recently begun to be included in surveys (Treas and Gubernskaya, 2012). It is possible that these new technologies have led to increases in frequency of contact, although this is likely less true for in-person contact. It may require more qualitative forms of data collection to learn how, for example, brief text messages influence the quality of intergenerational intimacy in comparison to longer phone or in-person conversations.

Our analysis is based on parental reports. Logan and Spitze (1996) found slight differences in patterns of contact and help based on parents' vs. children's reports, and parents may give somewhat more positive reports than their children (Aquilino, 1999). Parents may tend not only to report more contact, but more similar patterns of contact across children, not wanting to suggest favoritism. On the other hand, since we are examining patterns of change, any such bias might be less consequential for our findings here than in a cross-sectional analysis. In any case, it would be useful to conduct similar analyses with more recent data and with data based on children's reports (such as that collected by Pillemer and Suitor, 2002).

One future step in this research will be to examine how changes in one adult child's characteristics affect parents' contact with *other* children. For example, if one child produces a new grandchild, perhaps the first in the family, is there less contact between parents and other adult children? It is also possible that such an event would create more visiting among all the members of an extended family. However, increased visits between parents and that adult child's family might decrease time and energy available to see other adult children. A number of parallel questions could be asked, given sufficient detail about characteristics of all adult children and events in their lives.

These analyses have demonstrated how life course transitions experienced by aging parents and their adult children can be examined in family context to determine how changes experienced by one family member may influence relations with others. The life course perspective is central to our understanding of aging families, but the measurement and

analysis of change in family relations continue to present challenges to family researchers. We hope that these results will encourage additional attention to these issues.

Acknowledgments

Data in this article are from the first two waves of the National Survey of Families and Households. The first wave of the NSFH was funded by a grant (HD21009) from the Center for Population Research of the National Institute of Child Health and Human Development; and the second wave was funded jointly by this grant and a grant (AG10266) from the National Institute on Aging. The survey was designed and carried out at the Center for Demography and Ecology at the University of Wisconsin-Madison under the direction of Larry Bumpass and James Sweet. The field work for the first two waves was done by the Institute for Survey Research at Temple University. Analyses in this article were supported by a grant (1 RO3 HD048451-01-A2) from the National Institute of Child Health and Human Development to the University at Albany, Glenna Spitze, Principal Investigator, and Glenn Deane and Russell Ward, Co-Investigators. Support was also provided by a grant to the Center for Social and Demographic Analysis from NICHD (R24 HD044943). Opinions, findings, and conclusions expressed here are those of the authors and do not necessarily reflect the views of the funding agencies. We thank our research assistant Lei Lei for her expert file management, statistical programming and table construction.

References

Ahlberg D, DeVita C. New realities of the American family. Population Bulletin. 1992; 47(2):1–44.

Allison, P. Fixed effects regression methods for longitudinal data using SAS. Cary, NC: SAS Institute Inc; 2005.

Aquilino W. From adolescent to young adult: A prospective study of parent-child relations during the transition tom adulthood. Journal of Marriage and the Family. 1997; 59:670–686.

Aquilino W. Two views of one relationship: Comparing parents' and young adult children's reports of the quality of intergenerational relations. Journal of Marriage and the Family. 1999; 61:858–870.

Aquilino W. Impact of family structure on parental attitudes toward economic support of adult children over the transition to adulthood. Journal of Family Issues. 2005; 26:143–167.

Bengtson V. Beyond the nuclear family: The increasing importance of multigenerational bonds. Journal of Marriage and Family. 2001; 63:1–16.

Bengtson, V.; Harootyan, R. Intergenerational linkages: Hidden connections in American society. New York: Springer; 1994.

Bengtson, V.; Biblarz, T.; Roberts, R. How families still matter: A longitudinal study of youth in two generations. NY: Cambridge University Press; 2002.

Bengtson V, Roberts R. Intergenerational solidarity in aging families: An example of formal theory construction. Journal of Marriage and Family. 1991; 53:856–870.

Bengtson, V.; Rosenthal, C.; Burton, L. Families and aging: Diversity and heterogeneity. In: Binstock, R.; George, L., editors. Handbook of aging and the social sciences. 3. San Diego, CA: Academic Press; 1990. p. 263-287.

Bulcroft K, Bulcroft R. The timing of divorce: Effects on parent-child relationships in later life. Research on Aging. 1991; 13:226–243.

Connidis, I. Family ties and aging. 2. Los Angeles: Pine Forge Press; 2010.

Cooney T, Uhlenberg P. Support from parents over the life course: The adult child's perspective. Social Force. 1992; 71:63–84.

Coontz, S. The Way We Never Were: American Families and the Nostalgia Trap. New York: Basic Books; 1992.

Crimmins E, Ingegneri D. Interaction and living arrangements of older parents and their children. Research on Aging. 1990; 12:3–35. [PubMed: 2315554]

Deane, G.; Spitze, G.; Ward, R.; Zhou, Y. Close to you? How parent-adult child contact is influenced by family patterns. Paper presented at Annual Meeting of the American Sociological Association; 2009.

Dwyer J, Henretta J, Coward R, Barron A. Changes in helping behaviors of adult children as caregivers. Research on Aging. 1992; 14:351–375.

Elder, G.; Johnson, M. The life course and aging: Challenges, lessons, and new directions. In: Settersten, R., Jr, editor. Invitation to the life course: Toward new understandings of later life. NY: Baywood; 2003. p. 49-81.

Fingerman K, Pillemer K, Silverstein M, Suitor J. The baby boomers' intergenerational relationships. The Gerontologist. 2012; 52:199–209. [PubMed: 22250130]

Ganong, L.; Coleman, M. Stepfamily relationships: Development, dynamics, and interventions. NY: Kluwer Academic/Plenum Publishers; 2004.

Ganong L, Coleman M. Obligations to stepparents acquired in later life: Relationship quality and acuity of needs. Journal of Gerontology: Social Sciences. 2006; 61B:S80–S88.

Goldscheider F, Goldscheider C. Leaving and returning home in 20th Century America. Population Bulletin. 1994; 48(4):1–35.

Greenwell L, Bengtson B. Geographic distance and contact between middle-aged children and their parents: The effects of social class over 20 years. Journal of Gerontology: Social Sciences. 1997; 52B:S13–S26.

Hank K. Proximity and contacts between older parents and their children: a European comparison. Journal of Marriage and Family. 2007; 69:157–173.

Hogan D, Eggebeen D, Clogg C. The structure of intergenerational exchanges in American families. American Journal of Sociology. 1993; 98:1428–1458.

Jette A, Tennstedt S, Branch L. Stability of informal long-term care. Journal of Aging and Health. 1992; 4:193–211. [PubMed: 10117873]

Johnson DR, Elliott LA. Sampling design effects: do they affect the analyses of data from the National Survey of Families and Households? Journal of Marriage and Family. 1998; 60:993–1001.

Kaufman G, Uhlenberg P. Effects of life course transitions on the quality of relationships between adult children and their parents. Journal of Marriage and Family. 1998; 60:924–38.

Kalmijn M. Educational inequality and family relationships: Influences on contact and proximity. European Sociological Review. 2006; 22:1–16.

Kalmijn M, deVries J. Change and stability in parent–child contact in five Western countries. European Journal of Population. 2009; 25:257–276. [PubMed: 19657474]

Korn EL, Graubard BI. Epidemiologic studies utilizing surveys: accounting for the sampling design. American Journal of Public Health. 1991; 81:1166–1173. [PubMed: 1951829]

Lasch, C. Haven in a Heartless World: The Family Besieged. New York: Basic Books; 1977.

Lawton L, Silverstein M, Bengtson V. Affection, social contact, and geographic distance between adult children and their parents. Journal of Marriage and the Family. 1994; 56:57–68.

Logan, J.; Spitze, G. Family ties: Enduring relations between parents and their grown children. Philadelphia: Temple University Press; 1996.

Luescher K, Pillemer K. Intergenerational ambivalence: A new approach to the study of parent-child relations in later life. Journal of Marriage and the Family. 1998; 60:413–425.

Lye, D. Adult child-parent relationships. In: Hagan, J.; Cook, K., editors. Annual Review of Sociology. Vol. 22. 1996. p. 79-102.

Lye D, Klepinger D, Hyle P. Childhood living arrangements and adult children's relations with their parents. Demography. 1995; 32:261–280. [PubMed: 7664964]

Merrill, D. When your children marry: How marriage changes relationships with sons and daughters. Lanham, MD: Rowman & Littlefield; 2011.

Merz E, Schuengel C, Schulze H. Intergenerational relations across 4 years: Well-being is affected by quality, not by support exchange. The Gerontologist. 2009; 49:536–548. [PubMed: 19491361]

Moen, P. Gender, age and the life course. In: Binstock, R.; George, L., editors. Handbook of aging and the social sciences. 4. San Diego, CA: Academic Press; 1996. p. 171-187.

Musick K, Bumpass L. Reexamining the case for marriage: Union formation and changes in well-being. Journal of Marriage and Family. 2012; 74:1–18. [PubMed: 22611285]

Parker, K. The Boomerang Generation: Feeling OK about Living with Mom and Dad. 2012. http://www.pewsocialtrends.org/2012/03/15

Pillemer K, Suitor J. Explaining mothers' ambivalence toward their adult children. Journal of Marriage and Family. 2002; 64:602–606.

Popenoe D. American family decline, 1960–1990: A review and appraisal. Journal of Marriage and the Family. 1993; 55:527–542.

Rossi, A.; Rossi, P. Of human bonding: Parent-child relations across the life course. New York: Aldine de Gruyter; 1990.

Sarkisian N, Gerstel N. Till marriage do us part: Adult children's relationships with their parents. Journal of Marriage and Family. 2008; 70:360–376.

Shapiro A. Later life divorce and parent adult child contact and proximity: A longitudinal analysis. Journal of Family Issues. 2003; 24:264–285.

Silverstein M. Stability and change in temporal distance between the elderly and their children. Demography. 1995; 32:29–45. [PubMed: 7774729]

Silverstein M, Bengtson V. Intergenerational solidarity and the structure of adult child-parent relationships in American families. American Journal of Sociology. 1997; 103:429–460.

Silverstein M, Parrott T, Bengtson V. Factors that predispose middle-aged sons and daughters to provide social support to older parents. Journal of Marriage and Family. 1995; 57:465–476.

Silverstein M, Gans D, Yang F. Intergenerational support to aging parents: The role of norms and needs. Journal of Family Issues. 2006; 27:1068–1084.

Silverstein M, Waite L. Are blacks more likely than whites to receive and provide social support in middle and old age? Yes, no, and maybe so. Journal of Gerontology: Social Sciences. 1993; 48:S212–222.

Spitze G, Logan J, Deane G, Zerger S. Adult children's divorce and intergenerational relationships. Journal of Marriage and the Family. 1994; 56:279–293.

Spitze G, Ward R, Deane G, Zhou Y. Cross-sibling effects in parent-adult child exchanges of socioemotional support. Research on Aging. 2012; 34:197–221. [PubMed: 22389538]

Sweeney M. Stepfather families and the emotional well-being of adolescents. Journal of Health and Social Behavior. 2007; 48:33–49. [PubMed: 17476922]

Sweet, J.; Bumpass, L. The National Survey of Families and Households. Data description and documentation. Madison, WI: Center for Demography and Ecology, University of Wisconsin-Madison; 1996.

Szinovacz M, Davey A. Retirement effects on parent-adult child contacts. The Gerontologist. 2001; 41:191–200. [PubMed: 11327485]

Szinovacz M, Davey A. Changes in adult child caregiver networks. The Gerontologist. 2007; 47:280–295. [PubMed: 17565093]

Treas J, Gubernskaya Z. Farewell to Moms? Maternal contact for seven countries in 1986 and 2001. Journal of Marriage and Family. 2012; 74:297–311.

Umberson D. Relationships between adult children and their parents: Psychological consequences for both generations. Journal of Marriage and the Family. 1992; 54:664–674.

Uhlenberg P, Cooney T. Family size and mother-child relations in later life. The Gerontologist. 1990; 30:618–625. [PubMed: 2276634]

Ward R. Multiple parent-adult child relations and well-being in middle and later life. Journal of Gerontology: Social Sciences. 2008; 63B:239–247.

Ward R, Spitze G. Consequences of Parent-Child Coresidence: A Review and Research Agenda. Journal of Family Issues. 1992; 13:553–572.

Ward R, Spitze G. Will the Children Ever Leave? Parent-Child Coresidence History and Plans. Journal of Family Issues. 1996; 17:514–539.

Ward R, Spitze G, Deane G. The more the merrier? Multiple parent-adult child relations. Journal of Marriage and Family. 2009; 71:161–173.

Ward R, Spitze G. Nestleaving and coresidence by young adult children: The role of family relations. Research on Aging. 2007; 29:257–277.

Waite L, Harrison S. Keeping in touch: How women in midlife allocate social contacts among kith and kin. Social Forces. 1992; 70:637–654.

Winship C, Radbill L. Sampling weights and regression analysis. Sociological Methods & Research. 1994; 23:230–263.

Table 1

Characteristics of parents and adult children at wave 1 and from wave 1 to wave 2

Parental/family characteristics at wave 1			Parental/family characteristics from wave 1 to wave 2		
	Category or Range	% or Mean(sd.)		Category or Range	% or Mean(sd.)
Age	30–89	57.6 (11.5)			
Gender	Male	33.3			
	Female	66.7			
Education (years)	0–20	11.7 (3.1)			
Race/Ethnicity	Non- Hispanic White	80.3			
	Black	15.1			
	Hispanic	4.6			
Number of children at wave 1	1	8.5	Difference in number of children	−2 or more	1.5
	2	24.4		−1	1.4
	3	24.3		0	84.7
	4	16.7		1	5.9
	5 or more	26.1		2 or more	6.5
Marital status	Married	61.0	Marital status	Married → Married	52.6
	Separate	4.4		Not married (separate/ divorced) → Married	2.5
	Divorced	14.6		Not married (widowed) → Married	.9
	Widowed	19.3		Married → Separate/divorced	2.8
	Never married	.7		Married → Widowed	5.6
				Not married (never/sep/div/ widow) → Not married	35.7
Self-rated health	Very poor	2.4	Difference in self-rated health	−2 or more	4.4
	Poor	4.6		−1	23.1
	Fair	19.8		0	55.4
	Good	49.1		1	13.8
	Excellent	24.2		2 or more	3.2
Coresident adult child(ren)	No	65.7	Coresidence status	Non-coliving → Non-coliving	60.6
	Yes	34.3		Coliving → Non-coliving	14.9
				Coliving → Coliving	19.4
				Non-coliving → Coliving	5.1
N		2,414	N		2,414

Characteristics of adult children at wave 1			Characteristics of adult children from wave 1 to wave 2		
	Category or Range	% or Mean(sd.)		Category or Range	% or Mean(sd.)
Frequency of visit during past 12 months	Not at all	5.9	Change in the frequency of visit from wave 1 to wave 2	−5	.4
	About once a year	10.4		−4	.8
	Several times a year	24.2		−3	3.5
	1 – 3 times a month	18.0		−2	8.2

Characteristics of adult children at wave 1			Characteristics of adult children from wave 1 to wave 2		
	Category or Range	**% or Mean(sd.)**		**Category or Range**	**% or Mean(sd.)**
	About once a week	15.9		−1	19.6
	Several times a week	25.6		0	44.7
				1	15.2
				2	5.0
				3	1.8
				4	.6
				5	.3
Age	19–75	33.2 (9.1)			
Gender	Male	49.2			
	Female	50.8			
Biological or step child	Step	8.0			
	Biological	92.0			
Distance to parents	Close (0–25 miles)	52.4	Distance to parents from wave 1 to wave 2	Stayed close	43.6
	Middle (25–100miles)	12.7		Stayed middle	7.0
	Far (over100 miles)	34.9		Stayed far	28.5
				Close to middle	3.8
				Close to far	5.0
				Middle to close	2.9
				Middle to far	2.8
				Far to close	4.0
				Far to middle	2.4
Marital status	Unmarried	34.2	Marital status	Married → Married	57.1
	Married	65.8		Not married → Married	12.4
				Married → Not married	8.8
				Not married → Not married	21.8
Adult child's parental status	No	32.6	Parental status from wave 1 to wave 2	Have grandchild(ren) → Have grandchild(ren)	67.4
	Yes	67.4		No grandchild → Have grandchild(ren)	12.4
				No grandchild → No grandchild	20.1
N		6,045	N		6,045

Table 2

Hybrid fixed and random effects regression models

	Visit	
	Model 1	**Model 2**
Constant (wave 1 level of visiting)	4.07***	4.45***
Time (change in visit from wave 1 to wave 2)	−0.17***	**−0.16**
Parent-Adult Child Spatial Proximity		
Stayed middle		−1.26***
Stayed far		−2.54***
Close to middle		−0.38***
Close to far		−0.21***
Middle to close		−0.92***
Middle to far		−1.52***
Far to close		−2.32***
Far to middle		−2.40***
Stayed close		Reference
Stayed middle * time		**−0.24****
Stayed far * time		−0.03
Close to middle * time		**−0.71****
Close to far * time		**−1.93****
Middle to close * time		**0.69****
Middle to far * time		−0.75***
Far to close * time		**2.27****
Far to middle * time		0.83***
Parent's Marital Status		
Not married (separate/divorced) → Married		−0.09
Not married (widowed) → Married		0.02
Married → Separate/divorced		−0.24*
Married → Widowed		−0.00
Not married (never/sep/div/widow) → Not married		−0.26***
Married → Married		Reference
Not married (separate/divorced) → Married * time		−0.05
Not married (widowed) → Married* time		0.22
Married → Separate/divorced* time		**−0.27***
Married → Widowed* time		−0.08
Not married (never/sep/div/widow) → Not married * time		−0.02
Parent's Health		
Deviation from average health		0.02

	Visit	
	Model 1	**Model 2**
Average health between 2 waves		0.01
Coresidence with Adult Child(ren)		
Coliving → Non-coliving		0.09
Coliving → Coliving		0.13**
Non-coliving → Coliving		0.01
Non-coliving → Non-coliving		Reference
Coliving → Non-coliving* time		−0.10
Coliving → Coliving* time		**−0.17****
Non-coliving → Coliving* time		0.03
Parent's Age		
Deviation from average age		0.01
Average age between 2 waves		0.00**
Parent/Family Controls		
Parent's sex (Reference: male)		**0.12****
Parent's education		**0.01***
Black (Reference: non-Black)		−0.02
Hispanic (Reference: non-Hispanic)		0.07
Number of children		**−0.05****
Adult Child's Marital Status		
Not married → Married		0.14***
Married → Not married		−0.03
Not married → Not married		−0.01
Married → Married		Reference
Not married → Married* time		**−0.11***
Married → Not married* time		−0.00
Not married → Not married* time		−0.06
Adult Child's Parental Status		
No child → No child		−0.08*
No child → Have child(ren)		−0.08+
Have child(ren) → Have child(ren)		Reference
No child → No child* time		**0.09***
No child → Have child(ren)* time		**0.17****
Adult Child's Time-Invariant Characteristics		
Adult child's sex (Reference: male)		**0.12****
Adult child's sex* time		**0.08****
Biological child (Reference: stepchild)		**0.41****
Random effects		

	Visit	
	Model 1	**Model 2**
Family level		
Var (time)	.27	.25
Var (constant)	.72	.29
Var (time, constant)	−.15	−.12
Child level		
Var (time)	.14	.07
Var (constant)	1.00	.25
Var (residual)	.66	.48
Observations	12,090	12,090
chi2	81.12	12584
df	1	55

p-values, for two-tailed significance tests, are identified as:

$^{+}$ p<=0.1;

* p<=0.05;

** p<=0.01; and

*** p<=0.001

Table 3

Change in contact modified by child gender or biological/stepchild status: parent or child characteristics by child gender or biological/stepchild status by time

Visit							
Model 1		**Model 2**		**Model 3**		**Model 4**	
Not married (separate/divorced) → Married	0.03	No child → No child	0.21*	Stayed middle	−1.18***	Stayed middle	−0.92***
Not married (widowed) → Married	−0.10	No child → Have child(ren)	−0.13	Stayed far	−2.53***	Stayed far	−2.13***
Married → Separate/divorced	−0.22			Close to middle	−0.42***	Close to middle	−0.44*
Married → Widowed	0.02	No child → No child * time	**−0.14**	Close to far	−0.31***	Close to far	−0.01
Not married (never/sep/div/widow) → Not married	−0.23***	No child → Have child(ren) * time	0.28+	Middle to close	−0.81***	Middle to close	−0.63*
				Middle to far	−1.54***	Middle to far	−0.97***
Not married (separate/divorced) → Married * time	−0.06	No child → No child * biological child	−0.33***	Far to close	−2.33***	Far to close	−1.60***
Not married (widowed) → Married * time	**0.46**+	No child → Have child(ren) * biological child	0.06	Far to middle	−2.45***	Far to middle	−1.85***
Married → Separate/divorced * time	−0.41**						
Married → Widowed * time	−0.14	Biological child * time	−0.08	Stayed middle * time	−0.23**	Stayed middle * time	−0.23
Not married (never/sep/div/widow) → Not married * time	−0.03			Stayed far * time	0.01	Stayed far * time	−0.14
		No child → No child * time * biological child	**0.26***	Close to middle * time	−0.69***	Close to middle * time	−0.46*
Not married (separate/divorced) → Married * sex	−0.23	No child → Have child * time * biological child	−0.12	Close to far * time	**−1.68*****	Close to far * time	−1.79***
Not married (widowed) → Married * sex	0.28			Middle to close * time	0.66***	Middle to close * time	0.27
Married → Separate/divorced * sex	−0.04			Middle to far * time	−0.64***	Middle to far * time	**−1.27*****
Married → Widowed * sex	−0.04			Far to close * time	2.29***	Far to close * time	**1.47*****

Visit							
Model 1		**Model 2**		**Model 3**		**Model 4**	
Not married (never/sep/div/widow) → Not married * sex	−0.06			Far to middle * time	0.89***	Far to middle * time	0.55*
Sex * time	0.06			Stayed middle * sex	−0.15	Stayed middle * biological child	−0.37*
				Stayed far * sex	−0.02	Stayed far * biological child	−0.46***
Not married (separate/divorced) → Married * time * sex	0.03			Close to middle * sex	0.08	Close to middle * biological child	0.07
Not married (widowed) → Married * time * sex	**−0.59**+			Close to far * sex	0.20+	Close to far * biological children	−0.22
Married → Separate/divorced * time * sex	0.30			Middle to close * sex	−0.21	Middle to close * biological child	−0.32
Married → Widowed * time * sex	0.11			Middle to far * sex	0.04	Middle to far * biological child	−0.62**
Not married (never/sep/div/widow) → Not married * time * sex	0.02			Far to close * sex	0.04	Far to close * biological child	−0.81***
				Far to middle * sex	0.11	Far to middle * biological child	−0.62*
				Sex* time	0.14**	Biological child * time	−0.15+
				Stayed middle * time * sex	−0.04	Stayed middle * time * biological child	−0.01
				Stayed far * time * sex	−0.08	Stayed far * time * biological child	0.14
				Close to middle * time * sex	−0.05	Close to middle * time * biological child	−0.29
				Close to far * time * sex	**−0.49****	Close to far * time * biological child	−0.16
				Middle to close * time * sex	0.07	Middle to close * time * biological child	0.46
				Middle to far * time * sex	−0.25	Middle to far * time * biological child	**0.59***
				Far to close * time * sex	−0.04	Far to close * time * biological child	**0.92*****
				Far to middle * time * sex	−0.12	Far to middle * time * biological child	0.32
Random effects							
Family level							
Var (time)	.25	.25		.25		.25	
Var (constant)	.29	.29		.29		.29	
Var (time, constant)	−.12	−.12		−.12		−.12	

	Visit			
	Model 1	**Model 2**	**Model 3**	**Model 4**
Child level				
Var (time)	.07	.07	.07	.08
Var (constant)	.25	.25	.25	.25
Var (residual)	.48	.48	.48	.47
Chi-square	12593	12606	12608	12684
df	65	60	71	72

Table 3 shows only terms involved in the three-way interaction; models adjust for same specification given in Model 2 in Table 2

*** p<0.001,

** p<0.01,

* p<0.05,

+ p<0.1