
The experience of worry in parent–adult child relationships

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Abstract

This study examined the experience of worry in the parent–adult child relationship. A mother, father, and adult son or daughter from 213 families participated ($N = 639$). Parents and adult children commonly worried about one another and their worry reflected individual characteristics (e.g., neuroticism) and relationship characteristics (e.g., importance of the relationship and ambivalence). In addition, how much adults and their parents worried about one another influenced the other party's perceptions of relationship quality. Specifically, adults and parents rated their relationships more positively and more negatively when the other party reported worrying about them more and communicating their worries to them more frequently. Findings underscore the importance of including experiences such as worry in research on emotional complexities in the parent–adult child relationship.

Both positive and negative emotional experiences characterize ties between adults and their parents (Clarke, Preston, Raksin, & Bengtson, 1999; Lefkowitz & Fingerman, 2003). Parents and adult children commonly report tensions with one another (Fingerman, 2001; Fingerman, Hay, & Birditt, 2004; Umberson, 1992) and individual well-being is linked with such tensions (Shaw, Krause, Chatters, Connell, & Ingersoll-Dayton, 2004; Umberson, 1992). Surprisingly, scholars have not examined other

kinds of negative experiences that may also contribute to difficulties between adults and their parents. Yet, evidence suggests parents and adult children worry about one another (Boutain, 2001; Cicirelli, 1988; Parker, Call, Dunkle, & Vaitkus, 2002), and worry may play a role in their positive and negative perceptions of their relationship (Spitze & Gallant, 2004).

Worries—negative and intrusive thoughts about possible future events—are the cognitive component of anxiety (Borkovec, 1994; Davey, 1994; Scott, Eng, & Heimberg, 2002). In anxiety disorders, individuals experience pathological levels of worry (Dupuy, Beaudoin, Rheume, Ladouceur, & Dugas, 2001). Research has shown, however, that individuals without anxiety disorders also worry (Dupuy et al., 2001). Furthermore, worrying may negatively influence individual health and well-being (Beck et al., 2001; Hoyer, Becker, & Roth, 2001). Thus, understanding how much individuals worry about particular domains of life such as the parent–adult child tie may provide important information about individual functioning as well as relationship functioning.

This study provides an overview of the experience of worry in parent–adult child

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relationships. Specifically, we examine (a) how common worry is in this relationship, (b) individual and relationship variables associated with how much parents and adult children worry, and (c) interpersonal processes such as whether one party's worries are associated with the other party's perceptions about the relationship. In keeping with existing research, we conceptualize worries as negative thoughts about possible future events. Elsewhere, we describe the topics that generate worries for parents and their adult children (Hay, Fingerman, & Lefkowitz, 2006).

As we explain, several social scientific perspectives suggest that worry might be common between adults and their parents, given the unique dynamics of this relationship. Drawing upon Cicirelli's (1988) theory of filial ambivalence and Luescher and Pillemer's (1998) intergenerational ambivalence model, we argue that both the importance of the relationship to adults and their parents as well as their feelings of ambivalence may predict how much they worry about one another. In addition, we draw upon research on the importance of autonomy in this relationship and research on social support to better understand the role worry may play in parents' and adult children's positive and negative perceptions about their relationship. Finally, we also consider other characteristics, notably personality traits and generational status, that may play a role in the experience of worry in this relationship.

Life-span attachment theory and filial anxiety

In 1988, Cicirelli introduced the concept of filial anxiety. Although Cicirelli employed the broader term of anxiety, his definition and assessment of filial anxiety are consistent with current conceptualizations of worry. Specifically, filial anxiety is "a state of worry or concern about the anticipated decline and health of an aging parent as well as worry or concern about the ability to meet anticipated caregiving needs" (Cicirelli, 1988, p. 478). Cicirelli theorized that filial anxiety stems from the attachment bond and adult children's desire to protect (a) the parent from harm and (b) the parent-child bond from harm. Thus,

filial anxiety research focuses on the threat posed by advancing age and worsening health. We suggest, however, that anything that risks the well-being of a parent or the parent-child relationship could cause an adult child to worry. Additionally, we suggest that parents also worry about their adult children. Research clearly shows the relationship is important to both parties (Fingerman et al., 2004); thus, we argue that Cicirelli's theory provides a rationale for worries parents, as well as adult children, experience for one another.

In his initial conceptualization of filial anxiety, Cicirelli (1988) proposed that how much adults worried about their parents would reflect the strength of their affectional bond. Indeed, he found that adult children who reported greater love for their parents experienced greater filial anxiety. Parker et al. (2002), however, found that adult sons who rated the quality of their relationship with their parents highly did not worry more about their parents' health than sons who rated their relationship less highly. Such conflicting findings may reflect that relationship quality is not synonymous with the strength of the affectional bond between individuals. For instance, a parent-adult child pair may have a primarily positive relationship but not feel highly invested in one another. Furthermore, it seems possible that anxiously or ambivalently attached individuals might experience problematic relationships and worry about one another given the anxiety that characterizes such bonds. Thus, the association between relationship quality, attachment, and worry is unclear.

We attempt to shed light on this issue by using parents' and adult children's ratings of the relative importance of their relationship as an indicator of the strength of their bond. In adulthood, most parents and adult children rate their relationships positively (Fingerman, 2001; Umberson, 1992). Yet, parents and adult children vary in the importance they place on the relationship (Fingerman, 1996). Given Cicirelli's (1988) argument that adult children's anxiety (i.e., worry) stems from their desire to protect the emotional bond they share with their parents, we expected adults' and their parents' ratings of the importance of the parent-child bond to be positively associated

with how much they worry about one another. We also considered the association between parents' and adult children's experiences of worry and ambivalence in this relationship.

Intergenerational ambivalence in parent–adult child ties

The intergenerational ambivalence model may also help explain patterns of worry in the parent–adult child tie. In 1998, Luescher and Pillemer argued that both social structural ambivalence and social psychological ambivalence characterize parent–adult child bonds; that is, contradictory norms, perceptions, cognitions, and emotions are common in the parent–adult child relationship. The intergenerational ambivalence model posits that unclear norms for behavior between parents and adult children generate ambivalent feelings for the parties (Connidis & McMullen, 2002). To date, researchers have examined both the social structures that contribute to ambivalence (Peters, Hooker, & Zvonkovic, 2006; Spitze & Gallant, 2004) and the psychological experience of ambivalence (Fingerman et al., 2004; Holt-Lunstad, Uchino, Smith, Olson-Cerny, & Nealey-Moore, 2003; Willson, Shuey, & Elder, 2003).

We hypothesize that worry will be positively associated with the psychological experience of ambivalence within the parent–adult child relationship. As Luescher and Pillemer (1998) point out, norms offer guides for how parents and adult children should think and act. Yet when norms are contradictory, it is not clear how parents and adult children should think and act; thus, such contradictions give rise to the psychological experience of ambivalence. Similarly, research on self-concerns has demonstrated that individuals worry in unclear situations (Dugas, Freeston, & Ladouceur, 1997). Thus, situations that produce ambivalence could also foster worry among parents and adult children as they struggle to reconcile conflicting thoughts, perceptions, and behavioral prescriptions. We examined these issues by looking at parents' and adult children's perceptions of ambivalence (i.e., their mix of positive and negative feelings about the relationship) and whether

such perceptions predicted how much they worried about one another.

Autonomy, social support, and communication of worries

We also considered how parents and adult children express their worries for the other party. Attempts to respect each other's autonomy may also heighten parents' and adults' worries. Indeed, theorists have argued that noninterference is a central feature of close ties between adults and their parents (Fingerman, 2001; Lang & Schütze, 2002), and research indicates that adults and their parents avoid discussing issues that could cause tension (Beaton, Norris, & Pratt, 2003; Fingerman, 1998b; Hagestad, 1987). Such avoidance also may apply to worries, that is, in favor of maintaining positive relations, parents and adult children may tend to avoid discussing their worries with one another. As a consequence, however, their worries may go unresolved. We expect, therefore, that adults and parents who openly discuss their worries with the other party will tend to experience less worry for the other party.

In addition, the importance of autonomy in parent–adult child relationships speaks to the role that adults' and parents' worries may play in the other party's positive and negative perceptions about their relationship. Indeed, Spitze and Gallant (2004) raised an interesting paradox with regard to worry in parent–adult child relationships. Spitze and Gallant found that parents felt intruded upon and annoyed by their adult children's worries and the underlying message that they needed their adult children's assistance. Yet, these same parents appreciated the love behind their adult children's concerns.

Indeed, adults may discuss their worries with the target of those worries for a variety of reasons, including to prompt behavioral change or convey positive emotions, that is "I worry because I care." As such, conveying worries to social partners could constitute social support and influence the social partner's self-perceptions and perceptions about their relationship. Research shows parents and adult children exchange social support throughout

adulthood (e.g., Morgan, Schuster, & Butler, 1991; Talbott, 1990; Zarit & Eggebeen, 2002), yet recipients of support may not always perceive that support positively (Smith & Goodnow, 1999). Likewise, adults may interpret the worries their social partners experience for them in complex ways depending on numerous factors including how such worries are communicated.

A full consideration of these issues is beyond the scope of this article. Nonetheless, we attempt to provide a foundation for further research in this area by examining whether our research is consistent with Spitze and Gallant's (2004) suggestion that expressions of concern convey mixed messages. Specifically, we consider whether one social partner's worries are positively associated with the other social partners' positive and negative evaluations of the relationship. We expect this pattern to be particularly evident when parents and adult children openly discuss their worries with the other party.

Additional variables associated with parent–adult child worry

Research also suggests that adults' and their parents' worries for one another may reflect additional characteristics. We briefly consider four such factors: specifically, adult children's and parents' level of neuroticism, gender, generational status, and ethnicity.

Research on neuroticism has shown that some individuals experience more negative affect and worry than others (Endler & Kocovski, 2001). Yet, individuals who worry a great deal do not worry about different issues than individuals who tend to worry less. Rather, they experience more worry about similar issues (Borkovec, Shadick, & Hopkins, 1991). Consequently, we expect that parents' and adult children's levels of neuroticism will be positively associated with how much they worry about one another.

Research has also shown that women tend to worry more than men (Belzer, Zurilla, & Maydeu-Olivares, 2002; Hunt, Wisocki, & Yanko, 2002). Thus, we expect that women will experience more worry in the parent–adult child tie than men.

Strong generational differences are evident in many facets of this relationship. Parents tend to provide more emotional and material support to adult children than the reverse (McGarry & Schoeni, 1997), to view the relationship more positively (Giarusso, Feng, & Bengtson, 2005; Shapiro, 2004), and to report less conflict (Lefkowitz & Fingerman, 2003; Umberson, 1992). It is not clear, however, whether generational differences exist in worry. Following early relationship patterns when parents assume responsibility for the care, socialization, and nurturing of children, parents may worry more than adult children. Alternatively, adult children may worry more about their aging parents than the reverse due to the positive association between age and poor health (Jette, 1996; Manton, 1997) and the fact that adult children's tendency to worry is associated with poor parental health (Cicirelli, 1988; Parker et al., 2002). Additionally, parents may worry less because older individuals typically worry less than younger individuals (Babcock, Laguna, Laguna, & Urusky, 2000; Hunt et al., 2002). Given these different possibilities, we simply explore generational differences in worry.

Finally, to date, few studies have focused on ethnic variation in worry. Yet, as Scott et al. (2002) note, ethnic groups may differ in both the degree to which they worry as well as the issues they worry about. Given the lack of research in this area, we simply explore ethnic differences in how much parents' and adult children worry about one another.

In sum, we anticipated that adults and their parents would commonly worry about one another. We expected their worries to reflect the importance of their relationship, their feelings of ambivalence, how much they communicated with one another about their worries, and individual characteristics including their levels of neuroticism, gender, and generational status. We also predicted that parents and adult children would interpret one another's worries in a complex manner. Notably, we expected that adults and parents would rate their relationships more positively and more negatively when the other party worried more or discussed his or her worries with them.

Method

This research is part of The Adult Family Study (Fingerman, Lefkowitz, & Hay, 2004), a study on emotional complexities in parent-adult child ties. Temple University's Institute for Survey Research (ISR) collected the data in the Philadelphia area of Pennsylvania, United States, from fall 2002 through fall 2003. This study uses data gathered from telephone interviews; a subset of participants also completed questionnaires and videotaped conversations.

Sample

The sample consisted of 213 adult children aged 22–49 (110 daughters and 103 sons) and both their mother and father whose ages ranged from 40 to 84 ($N = 639$). Because part of the study involved videotaping parents and adult children together, parents and adult children had to live within 50 miles of one another and be in adequate health to complete both phone and in-person interviews. Approximately one third to one half of adults in this age range live within 50 miles of their parents (Booth, Johnson, White, & Edwards, 1991). Fifty miles is a driving distance of over 1 hr in this geographic area and is consistent with studies examining geographically close and distant parent-child dyads in the United States (e.g., Lawton, Silverstein, & Bengtson, 1994; Silverstein & Bengtson, 1997).

We recruited most family triads (~80%) using phone lists purchased from Genesys Sampling Systems, a sampling company. These lists included (a) all listed phone numbers in the sampled counties that Genesys augmented with basic demographic data using various sources (e.g., state records) and (b) randomly generated numbers. We recruited additional participants through convenience methods (e.g., church bulletins) and snowball sampling strategies. We adopted multiple strategies given research by Karney et al. (1995) suggesting that doing so would generate a sample of families' with relationships of varied relationship quality. This mix of sampling methods yielded approximately 30% African American families and 70% European American families, and even distributions of

adult child age and gender. No differences existed in distributions of ethnicity, adult child age and gender, or on the main variables of interest examined in this study as a result of recruitment type.

When we initially contacted households, we screened individuals aged 22–49 to determine if they and their parents were eligible. When a household only contained adults over the age of 50 years, we determined if they and their children were eligible. If an adult had more than one eligible adult child, we invited the adult child with the most recent birthday to participate in the study. Once any of the three family members declined participation, we did not pursue consent from other family members. For example, if the first member of a family contacted by phone was an eligible adult child who agreed to participate, we obtained contact information for their parents. If the next person contacted was the mother and she declined participation, we did not pursue consent from the father. Given that we required all three family members' participation for the study, pursuing the consent of family members once one member of the triad had declined was not an effective use of resources. Furthermore, in many cases, the nonconsenting family member would have been our source of contact information for the remaining family members. Finally, in families with more than one adult child, we did not pursue the consent of adult children other than the originally targeted child (i.e., the adult child who was the first family member contacted or the adult child with the most recent birthday). We followed this procedure to avoid a final sample biased toward inclusion of favored children and highly positive parent-adult child dyads. These recruitment strategies are consistent with other studies involving multiple family members and using listed samples (e.g., Carstensen, Gottman, & Levenson, 1995; Plomin, Reiss, Hetherington, & Howe, 1994).

Given the complexities involved in attempting to recruit multiple family members, accurate information on issues such as how many family triads were eligible to participate but declined are unknown. Nonetheless, comparisons to Census data indicate that these

participants reported incomes consistent with the median household income of individuals living in the sampled counties (i.e., in the range of \$40,001–\$75,000 compared to \$48,000, respectively). In addition, 40% of participants in this study had a college education, whereas 29% of individuals 25 years of age and older in these five counties do (U.S. Census Bureau, 2003).

One hundred and forty-one of the triads were European American and 66 were African American. In 6 family triads, the adult children and parents were from different racial groups or of mixed race. Most mothers (98%) and fathers (92%) were the biological parents of the adult children. In 86% of the families, the parents of the participating child were married to one another; 8% of the parents in the study were married or cohabiting to someone other than the adult child's other parent. Only 6% of parents who participated were never married, divorced, or widowed (i.e., from a partner other than the adult child's other parent).

Procedures

Trained interviewers at Temple University's ISR conducted phone interviews lasting 45–60 min. We did not interview family members in any predetermined order. Parents answered questions about their sociodemographic and individual characteristics and their relationship with the participating adult child. Adult children answered questions about their sociodemographic and individual characteristics, as well as separate questions about their relationships with their mother and father (in random order). Therefore, for person-specific indicators (e.g., age, neuroticism), we have three reports per family: one from the mother, father, and adult child. For relationship-specific indicators (e.g., worry), we have four reports for each family: one from the mother about the mother–child relationship, one from the father about the father–child relationship, one from the adult child about the father–child relationship, and one from the adult child about the mother–child relationship.

Demographic characteristics. Participants indicated their gender (*women* = 0, *men* = 1),

their age in years, and their race (*European American* = 0, *African American* = 1). We coded generational status as *parent* = 0 and *adult child* = 1. Participants also indicated their years of education, employment status, and their total 2001 household income.

Health. Parents and adult children rated their current physical health on a 5-point scale from 1 (*excellent*) to 5 (*poor*). Self-ratings of health are associated with physical and mental health and mortality (Hays, Schoenfeld, & Blazer, 1996; Idler & Kasl, 1991). We reverse coded the scores, so higher scores indicate better health. On average, parents reported being in good to very good health ($M = 3.3$, $SD = 1.0$) and adult children reported being in very good health ($M = 3.7$, $SD = 0.8$).

Neuroticism. Respondents completed the 12-item neuroticism subscale of the Revised Eysenck Personality Questionnaire, a measure assessing a respondent's tendency to experience negative affect (Eysenck, Eysenck, & Barrett, 1985). Individuals respond *yes* (1) or *no* (0) to a series of questions (e.g., Are you an irritable person?). Scores range from 0 to 12; higher scores indicate higher neuroticism. The internal consistency of the scale was adequate (adult child $\alpha = 0.73$, parent $\alpha = 0.73$). Participants' mean neuroticism scores were low: for adult children, $M = 4.18$, $SD = 3.0$; for mothers, $M = 2.89$, $SD = 2.42$; and for fathers, $M = 2.42$, $SD = 2.56$.

Separate paired-samples *t* tests revealed that mothers and fathers had lower levels of neuroticism than adult children, $t(212) = 6.97$, $p < .001$ and $t(212) = 5.50$, $p < .001$, respectively. Mothers' and fathers' neuroticism scores did not differ. Research has shown neuroticism tends to decline with age (Clark, Watson, & Mineka, 1994), although it may rise slightly in old-old adulthood (Teachman, 2006).

Importance of relationship. Based on prior research (Fingerman, 1996, 2001), participants indicated how important they considered their relationship with their mother, father, or adult child on a 6-point scale: 1 (*most important person in your life*), 2 (*among the 3 most*

important), 3 (among the 6 most important), 4 (among the 10 most important), 5 (among the 20 most important), and 6 (less important than that). We reverse coded this item, so that higher numbers equal greater importance (Table 1).

Positive and negative qualities of the relationship. Participants responded to an adaptation of Newsom, Nishishiba, Morgan, and Rook’s (2000) measure of positive and negative social exchanges, the Parent Adult Relationship Quality Scale (Pitzer, Fingerman, &

Lefkowitz, 2007). We reworded items in the original measure to refer to the parent–adult child relationship, and we changed the time frame to encompass 12 months. During pilot testing, we eliminated redundant items.

The resulting measure asks how often a respondent’s mother, father, or adult child had engaged in six positive actions toward them in the past 12 months including (a) acting warm or affectionate, (b) acting thoughtful or considerate, (c) doing favors, (d) being supportive of decisions, (e) being dependable, and (f) being trustworthy. In addition, eight

Table 1. Descriptive statistics for relationship indicators presented separately for mothers, fathers, adult children about mothers, and adult children about fathers

Variable	Mothers	Fathers	Adult children about mothers	Adult children about fathers
Worry^a				
Not at all	.10	.12	.11	.10
A little	.32	.36	.32	.38
Somewhat	.36	.30	.33	.36
Quite a bit	.13	.15	.16	.11
A great deal	.09	.07	.09	.05
<i>M</i>	2.77	2.68	2.80	2.63
<i>SD</i>	1.07	1.08	1.10	0.97
Range	1–5	1–5	1–5	1–5
Importance of relationship				
<i>M</i>	4.36	4.48	4.50	4.28
<i>SD</i>	0.91	0.78	0.88	0.86
Range	1–6	2–6	1–6	1–6
Communication about worry				
<i>M</i>	3.56	3.36	3.56	3.21
<i>SD</i>	0.86	0.85	0.90	0.94
Range	1–5	1–5	1–5	1.5–5
Ambivalence				
<i>M</i>	1.37	1.33	1.38	1.33
<i>SD</i>	.97	0.87	0.93	0.93
Range	0–4.2	0–4.2	0–3.8	0–3.9
Negative qualities				
<i>M</i>	13.63	12.92	13.70	13.10
<i>SD</i>	4.80	3.92	4.50	4.50
Range	8–31	8–27	8–31	8–32
Positive qualities				
<i>M</i>	25.36	24.69	25.80	24.51
<i>SD</i>	3.77	3.80	3.80	4.57
Range	12–30	8–30	10–30	6–30

^aIn addition to means, we also report the proportion of individuals selecting each response choice for worry.

negative actions are assessed including (a) being angry or hostile, (b) behaving insensitively, (c) making the participant feel bad or inferior, (d) not giving desired assistance, (e) making demands for favors, (f) questioning or doubting the participants decisions, (g) forgetting or neglecting the participant, or (h) being untrustworthy. Possible responses ranged from 1 (*never*) to 5 (*always*). We summed items to create a positive and negative subscale. Higher scores indicate greater negative and positive relationship quality. The scale reliability was high for parents and adult children (positive average $\alpha = .84$; negative average $\alpha = .82$; see Table 1).

Ambivalence. We calculated participants' ambivalence scores from their positive and negative qualities scores (see above) using Griffin's Similarity and Intensity of Components formula (Thompson, Zanna, & Griffin, 1995). This formula is commonly used in the ambivalence literature (e.g., Willson et al., 2003) and takes into account coexisting positive and negative sentiments:

$$\frac{(\text{Positive} + \text{Negative})/2 - |\text{Positive} - \text{Negative}|}{2}$$

Because the resulting scores may be negative, we added a constant of 1. Higher scores indicate greater ambivalence. For example, a mother with a positive score of 5 and a negative score of 2 has a low ambivalence score (0.5). In contrast, a mother with a positive score of 5 and a negative score of 4 has a higher ambivalence score (3.5), indicating that she experiences a greater mix of positive and negative sentiments. Possible scores range from 0 to 5 (see Table 1).

Communication about worry. Participants indicated how true two statements were of them when they worried about their mother, father, or the adult child in the study. To illustrate, adult children responded to the following two statements about their mothers: "I openly discuss my concerns with my mother" and "I give my mother information I think will be helpful." We posed parallel statements to adult children about their fathers and to parents about the participating adult child. Participants

responded on a scale of 1 (*never*) to 5 (*always*). Participants' responses to the two items were highly correlated ($r = .53$, $p < .001$) and were averaged to create a single score ranging from 1 to 5 (see Table 1).

We are aware of no existing measures that assess this construct, and consequently, we developed these items for this study. We deliberately worded the items in a neutral or positive manner to avoid equating the communication of worries with tensions or arguments.

Worry in parent-adult child relationships. To assess the main variable of interest, parents and adult children rated their worry for the other party on a scale of 1 (*not at all*) to 5 (*a great deal*). Specifically, adult children responded to the following question about their mother: "Thinking about your relationship with your mother, overall, how much do you worry about her?" We asked parallel questions of adult children about their fathers and of parents about the participating adult child. Single-item measures are not ideal; however, they have been successfully used by other researchers to assess worry in parent-adult child ties (Parker et al., 2002) as well as relationship quality (Umberson, 1992). Many existing measures of worry reflect a focus on pathological worry and tap the extent that worries are uncontrollable, linked with physiological experience, and interfere with day-to-day functioning (e.g., The Penn State Worry Questionnaire; Meyer, Miller, Metzger, & Borkovec, 1990). Such measures were not well suited to this study. Consequently, for both parsimony and given the lack of research in this area, we elected to use a single item intended to tap how frequently parents and adult child worry about one another overall. We present the distribution of responses and descriptive statistics in Table 1.

Results

Given that multiple individuals from the same family participated, all analyses had to take into consideration the nonindependent structure of the data. In order to present descriptive and summary statistics (e.g., means) in a way

that does not mask the dependency of the data, we present descriptive statistics separately for mothers, fathers, and adult children discussing their mothers and fathers. Presenting descriptive information separately in this manner does not adjust for any dependency issues. Nonetheless, it allows the reader to examine this information separately for each family member's reports and is preferable to presenting statistics based upon multiple within-family reports. Given the dependency within the data, we do not present the bivariate associations among the variables of interest.

Regarding relationship-specific variables, parents' and adult children's ratings of worry were evenly distributed and parents and adult children were moderately worried about one another; the average individual was worried *a little to somewhat* about the other party (Table 1). Parents and adult children in this study reported relatively positive relationships, which is also evidenced in the low average ambivalence scores. Finally, parents' and adult children's average scores on the communication variables indicate that most parents and adult children reported talking to the other party about their worries *sometimes to often*.

Individual characteristics, relationship characteristics, and worry

Next, we tested our hypotheses using two-level general linear mixed models (Laird & Ware, 1982; Littell, Milliken, Stroup, & Wolfinger, 1996). We used SAS to estimate the models (SAS Institute Inc., 2000). We used a family variable to identify the nested structure of the data and specified an error structure called compound symmetry (Singer, 1998). The resulting models, therefore, separate the variance into between- and within-family variance. Between-family variance is variance that is associated with how families differ in terms of how much they worry from other families. Thus, this variance addresses the issue of whether worry is, to some degree, a family level characteristic that can be explained by family-level variables (such as ethnicity). In contrast, within-family variance is variance that reflects how individuals differ with regards to how much they worry (i.e., from other individuals).

Thus, this variance addresses the extent to which worry is an individual characteristic that can be explained by individual-level variables (such as neuroticism).

We specified a compound symmetry error structure because the four within-family reports (i.e., mother's report, father's report, adult child report on mother, adult child report on father) could be associated for various reasons, but there is little reason to expect that the reports of individuals from different families would be associated. For instance, a particular adult child could worry for both of their parents because they possess a generalized tendency to worry. Alternatively, a mother and father could both worry about their adult child because there is an objective reason to do so (e.g., a major health problem). Thus, we constructed a model that partitioned variance into between- and within-family variance and examined whether our variables of interest were systematically associated with that variance.

Given that both African and European American families participated in the study, we included family ethnicity as a family-level variable. For the six families wherein all three individuals did not report the same ethnicity, we used the adult child's ethnicity as the "family" ethnicity. At the individual level (i.e., lower level), we included characteristics of parents, adult children, and their relationships (e.g., neuroticism, individuals' ratings of the importance of the relationship).

Prior to estimating models with independent variables, we estimated unconditional means models (Singer & Willett, 2003). These models partition the variance in the dependent variable into variance that is due to between-family differences and variance that is due to within-family differences. Such models offer insight into what variables (i.e., within- or between-family variables) are likely to explain the greatest variation in the dependent variable. For instance, if the majority of variance in a dependent variable is between-family variation, in order to understand that outcome it is most helpful to consider the ways that families differ from each other rather than how individuals differ within families.

First, we examined how much parents and adult children worried about one another. The

unconditional means model revealed between-family differences accounted for 21.9% of the variation in how much individuals worry, that is, some families worry more than others. The majority (78.1%) of the variation in worry was within family, however, and is attributable to mothers', fathers', and adult children's reports differing from one another.

The next model examined how much parents and adult children worry about one another and included family ethnicity, participants' neuroticism scores, gender, generational status, perceived importance of the relationship, ambivalence, and how much they communicate their worries to the other party as independent variables. Thus, this model examined how much parents and adult children worried about one another using their own characteristics and perceptions as independent variables. We did not include the separate indicators of positive and negative relationship qualities due to theoretical and measurement issues. Theoretically, we hypothesized that ambivalence would be associated with worries. Empirically, the ambivalence scores were derived from the positive and negative relationship quality indicators and inclusion of all three indices would generate multicollinearity in the model.

The results of this model revealed that parents and adult children with higher neuroticism scores experienced more worry about the other party, as did parents and adult children who rated their relationship as more important and who experienced greater ambivalence (Table 2). The model also revealed that African American families worried more than European American families. Note that the pattern of results did not change if we excluded the six families of mixed-ethnicity from the analysis or reestimated the models with ethnicity entered as a lower level variable (i.e., allowing it to vary within families).

Parents' and adult children's gender and generational status did not play a role in how much they worried about the other party. Given the possibility that generation differences in health could confound findings regarding generational status, we reestimated the models including the health of the other party as a lower level control variable. The inclusion of health of the other party did not alter the

pattern of findings and we do not present this model. In other models, we explored whether parents' and adult children's worry reflected the interaction of their gender and that of the other party, for example whether mothers worry more about their sons than their daughters. These models revealed no differences in how much mothers and fathers worried about their daughters and sons. Furthermore, sons worried equally about their mothers and fathers. Daughters, however, worry slightly more about their mothers than fathers. In the interests of parsimony and given that we did not develop hypothesis about such interactions, we do not present these models.

Interpersonal processes, worry, and the other party's perceptions of relationship quality

Next, we examined whether one member of the dyad's worries and tendency to discuss their worries influenced the other member of the dyad's perceptions of relationship qualities. Given our interest in the distinct association of worry with the other party's positive and negative feelings, we conducted these analyses using the separate indicators of positive and negative relationship qualities rather than ambivalence scores.

First, we estimated the unconditional means models. Approximately 33% of the variation in participants' responses regarding the negative qualities of their relationships reflected between-family differences and 67% within-family differences. Similarly, 28% of the variation in participants' ratings of positive relationship qualities reflected between-family differences and 72% within-family differences. Next, we reestimated the models including how much the other member of the dyad worried and how much they communicated their worries to the other party as independent variables (Table 3). We also included the other member of the dyad's neuroticism scores to control for any influence that their general negativity could have on the respondent's ratings of relationship quality. These models revealed that the more parents or adult children worried about the other party, and the more they talked about their worries, the more

Table 2. Mixed model predicting how much parents' and adult children's worry about the other party with their family ethnicity and their own individual characteristics and perceptions of their relationship

Variable	Unstandardized coefficient	SE	t value
Intercept	1.87	0.27	
Neuroticism	0.06	0.01	4.58***
Gender ^a	0.13	0.07	1.78
Generation ^b	0.09	0.07	1.36
Ethnicity ^c	-0.27	0.09	-2.80**
Importance of other	0.10	0.04	2.37**
Ambivalence	0.13	0.04	3.28***
Communication about worry	0.01	0.02	0.48
Estimated parameters	10		
Deviance	2,303.7		
Residual between-family variance (σ)	0.17		
Residual within-family variance σ_E^2	0.84		

Note. In the statistical package used, the highest coded category is used as the reference value for categorical variables. ^aGender is coded 0 = women, 1 = men. ^bGeneration is coded 0 = parent, 1 = adult children. ^cEthnicity is coded 0 = European American, 1 = African American.

** $p < .01$. *** $p < .001$.

positively the other party rated the relationship. In addition, the more the parent or adult child talked about their worries, the more negatively their social partner rated the relationship. How much parents and adult children worried was not associated with the other party's ratings of negative relationship qualities. These models also revealed that the social partner's neuroticism scores were positively associated with parents' and adult children's ratings of negative relationship qualities but not positive relationship qualities. Last, we reestimated these two models with the interaction between worry and communication about worry included. The interaction term was not significant in either model; thus, we do not present those models.

Discussion

This study provides a unique look at worry in parent-adult child ties. We examined how much adults and their parents worried about one another and how their worries fit into the broader issue of relationship quality. Almost all adult children and parents reported that they worried about the other party at least a lit-

tle, and over half of adult children, mothers, and fathers reported that they worried somewhat or more. In contrast, studies find conflict and tension are typically mild in this tie (Fingerman, 2001; Umberson, 1992). The relatively high frequency of worry evidenced by parents and adult children is notable given the positive association between worry and poor mental and physical health (Beck et al., 2001; Fingerman, 1998a; Freeston et al., 1996).

Further, parents' and adult children's experience of worry reflected their own characteristics and qualities of their relationships. Notably, findings indicate worries reflect adults' and their parents' investment in the relationship as well as their feelings of ambivalence. Finally, how much adults and their parents worry about one another and communicate their worries to one another is associated with the other party's perceptions of relationship quality.

Individual characteristics and worry in parent-adult child ties

The findings revealed some interesting associations between individual characteristics of parents and adult children and their tendency

Table 3. Summary of mixed models predicting parents' and adult children's ratings of positive and negative relationship quality with their social partners' ratings of worry, communication, and neuroticism

Predictor	Positive qualities			Negative qualities		
	Unstandardized B	SE	<i>t</i> value	Unstandardized B	SE	<i>t</i> value
Intercept	3.80	0.10		1.54	0.70	
Social partners' worry	0.05	0.02	2.19*	0.00	0.02	-0.41
Social partners' communication	0.04	0.01	3.40***	0.02	0.01	2.04*
Social partners' neuroticism	-0.01	0.01	-1.86	0.02	0.01	2.31*
Estimated parameters	5			5		
Deviance	1,647.5			1,313.9		
Residual between-family variance (σ)	0.12			0.11		
Residual within-family variance σ_E^2	0.32			0.21		

* $p < .05$. *** $p < .001$.

to worry about one another. First, we found a positive association between how much parents and adult children worried about one another and their neuroticism scores. This finding is consistent with research indicating that personality traits influence individuals' tendency to experience negative affect (Mroczek & Almeida, 2004) and worry about themselves (Eysenck et al., 1985). Although not surprising, this finding is unique in the literature concerning the parent-adult child tie. Research on parent-adult child relationships in adulthood has examined issues such as structural characteristics (e.g., generational status, race, gender; Fingerman, 2001; Suito, Pillemer, Keeton, & Robinson, 1995), conflict and tension (Beaton et al., 2003; Clarke et al., 1999), and the adult child's achievements (Carr, 2005). Yet, research has rarely focused on how personality traits shape this relationship once children are adults. Further, our findings indicate that parents' and adult children's neuroticism scores are associated with the other member of the dyad's perceptions of relationship quality. Thus, findings in this study suggest the need to consider how personality factors may influence the dynamics and outcomes of parent-adult child relationships.

The lack of generational differences contrasts previous findings suggesting that older adults worry less than younger adults (Babcock et al., 2000; Hunt et al., 2002). Thus, despite the tendency for individuals to worry

less as they age, parents appear to worry about their adult children in levels similar to how much their adult children worry about them. Indeed, although age is associated with poorer health (Jette, 1996; Manton, 1997) and adult children worry about their parents' diminishing health (Cicirelli, 1988), our findings reveal that such forces do not result in overall generation differences in how much parents and adult children worry about one another. Taken as a whole, our findings suggest that it is necessary to explore the variety of worries that adults and their parents experience for one another rather than focusing exclusively on the health worries that adult children experience for their parents.

The lack of gender differences is also notable and could reflect several issues. First, research supporting gender differences has typically examined general tendencies to worry (Belzer et al., 2002; Hunt et al., 2002). Once we account for general tendencies (herein with the inclusion of neuroticism), gender differences in worrying about a particular relationship may not remain. Furthermore, gender differences in parent-adult child ties may be more pronounced in behaviors (e.g., caregiving) than in emotional experiences. Finally, parents and adult children in this study lived independently from one another and were in relatively good health. In such circumstances, gender differences may be less pronounced. For example, some research suggests

that when parents are relatively healthy, sons are as likely as daughters to provide assistance (Fingerman, Hay, Kamp Dush, Cichy, & Hosterman, 2007; Spitze & Logan, 1990), although not all research has found this pattern (Matthews, 1995). Of course, the possibility remains that generation and gender differences could exist in the types of issues that parents and their adult children worry about. Additionally, although we did not focus on the interaction of the parent and adult child's gender, our data suggest that daughters may worry slightly more about their mothers than their fathers. Overall, however, this study suggests that few gender or generation differences exist in the amount parents and adult children worry for one another.

Worrying and relationship characteristics

Although worry was not strongly associated with individuals' gender or age, worry was associated with features of the parent–adult child relationship. Indeed, worry appears to reflect the shared investment that characterizes parent–adult child relationships. As predicted by Cicirelli's (1988) theory of filial anxiety, parents and adult children who consider their relationship highly important worry more about the other party than parents and adult children who consider their relationship less important. These parents and adult children may worry more than parents and adult children who consider the relationship less important because they are more attuned to threats to the other party or their relationship (such as a parent's poor health).

Furthermore, as we predicted, increased ambivalence in the relationship was associated with greater worries. The intergenerational ambivalence model suggests that ambivalent feelings stem from contradictory circumstances and norms within relationships (Luescher & Pillemer, 1998), and research reveals individuals worry more in uncertain circumstances (Dugas et al., 1997). Indeed, research has suggested that individuals worry, in part, to feel in control of uncontrollable or unpredictable events (Matthews, 1990). It is possible, therefore, that worrying may be associated with adult children's and parents' feelings of

ambivalence because it represents an attempt by parents and adult children to gain a sense of control over situations that generate feelings of ambivalence. Clearly, we are speculating. Nonetheless, additional research examining the association between ambivalence in the parent–adult child relationship and worry may provide important information about the types of emotions and experiences associated with intergenerational ambivalence.

Interpersonal processes, worry, and family patterns

This study also provides evidence that parents and adult children react to one another's communications. Parents and adult children alike felt more positively about their relationships when the other party worried more about them and communicated those worries to them. Worry and communication about worries did not interact, however, indicating that they influence perceptions of relationship quality independently from one another. This pattern of findings is consistent with Spitze and Gallant's (2004) suggestion that worries may convey love and care between adults and their parents. At the same time, however, worries and discussing one's worries with the other person appears to exact a cost. The more parents and adult children worry about one another and discuss those worries, the more negatively the other party rated the relationships. Indeed, Spitze and Gallant also argued that parents or adult children interpret the other party's worries as intrusive or indicating a lack of confidence in their abilities.

Alternatively, of course, worry could stem from problems in relationships. For example, in problematic parent–adult child relationships, parents and adult children may not receive reassurances from one another that their worries are unfounded or the problems in their relationship may themselves generate worry. Clearly, further research is needed to understand why worry is linked with increased negative and positive qualities in parent–adult child ties. Given the aforementioned link between worry and ambivalence, such research could also contribute to our understanding of intergenerational ambivalence.

It is also notable that parents and their adult children commonly discuss their worries with one another. Research on annoyances and tensions in parent–adult child ties suggests that parents and adult children avoid discussing topics that have the potential to generation tensions in their relationship (Beaton et al., 2003; Hagestad, 1987). Given that worrying and communicating one’s worries to a parent or adult child are associated with their perceptions of negative relationship quality, we might expect parents and adult children to avoid discussing worries much like they avoid discussing annoyances and tensions. Yet, this does not appear to be the case. This paradox may reflect the mixed nature of worry and the growing findings that suggest worries can also convey love and care to the other party. Alternatively, it may reflect differences in the content of worries versus tensions and annoyances, a topic for future investigation.

Although we did not focus on worry as a family trait, our findings reveal associations in how much family members worry. Approximately 30% of the variation in how much parents and adult children worry about one another was between-family variation and reflects how families differ from other families. Simply, some families are composed of individuals who tend to worry a lot and other families are composed of individuals who worry much less.

Indeed, our research revealed that ethnicity accounts for some between-family variation in worry. Specifically, individuals in African American families tended to worry more about one another than individuals in European American families. In previous work, Scott et al. (2002) found ethnic differences in how much American college students worried about various issues and concluded that ethnic differences exist in the salience of particular worries. At present, we know of no research that explores ethnic differences in worry in sufficient depth to explain the source of such differences. Perhaps, ethnic and racial disparities in health and economics (Browning, Cagney, & Wen, 2003; Fiscella, Franks, Doeschler, & Saver, 2002; Ren & Amick, 1996; Thomas & Horton, 1992) influence how much African American and European American parents

and adult children worry about one another. Alternatively, ethnic differences in the meaning of worry might influence how much African American and European American families report worrying about one another.

Other dynamics could also underlie why families differ in the degree to which they worry about one another. Similarities between parents and adult children could stem from shared, heritable traits such as neuroticism (Loehlin, McCrae, Costa, & John, 1998; Rose, 1988) as well as how the parents’ personality traits shape parenting practices and the home environment (Belsky, Crnic, & Woodworth, 1995; Ellenbogen & Hodgins, 2004). Indeed, mothers, fathers, and adult children may experience similar levels of worry because they communicate their worries to one another. Future research should consider the extent to which such shared family variance reflects family processes and heritable traits.

Furthermore, cultural differences could play a role in the experience of worry within parent–adult child ties. Existing research has revealed cultural differences in various dimensions of parent–adult child ties (e.g., Ishii-Kuntz, 1997; Silverstein, Burholdt, Wenger, & Bengtson, 1998). Notably, research suggests that the Western emphasis on autonomy and noninterference in close ties is not universal (Rothbaum, Pott, Azumi, Miyake, & Weisz, 2000), and researchers have argued that ethnic and cultural differences in perceptions of filial obligations shape parent–adult child ties (Ishii-Kuntz, 1997; Keefe, Rosenthal, & Beland, 2000). Unfortunately, given the lack of research on worry in parent–adult child relationships, it is difficult to develop strong hypotheses regarding how ethnic and cultural differences could influence the experience of worry within parent–adult child ties. Nonetheless, given how common worry was among these parents and adult children, future research examining worry in more diverse samples of parents and adult children is clearly warranted.

Practical implications and limitations

Despite being a relatively new area of research, clinicians serving the needs of adult

children and their parents may find this research helpful, particularly our findings regarding the commonality of worry and the mixed messages that worry appears to convey to social partners. First, clinician can use this information to help “normalize” the experience of worry for adult children and their parents and provide evidence that a certain degree of worry is common in this relationship. In addition, clinicians could use these findings to enhance understanding and communication between adults and their parents. Specifically, clinicians could convey to adults and their parents how their worries might enhance their relationships in some ways (e.g., by conveying positive regard for the other party) but that parents and adult children should avoid undermining the other party’s feelings of autonomy and competence when discussing worries.

The main limitations of this study are the select sample, the use of a single-item indicator of worry, and the cross-sectional research design. Although this study is not representative of the population of parents and adult children in the United States, it is consistent with prior studies of intergenerational ties focusing on a single geographic area (Pillemer & Sutor, 2002; Rossi & Rossi, 1990; Spitze & Logan, 1990). Indeed, the parents and adult children in this study tended to describe their relationships in predominantly positive ways (i.e., with high positive and low negative quality), a pattern that is consistent with previous research on this tie (Rossi & Rossi, 1990; Umberson, 1992).

Regarding single-item indicators, as discussed earlier, previous research has used single-item indicators to assess emotional qualities in this relationship. Clearly, however, they are not ideal. Given that this research reveals worry within the parent–adult child is relatively common, future research should assess worry with a greater variety of methods such as multiitem and multidimensional scales as well as with open-ended formats. In addition, future research might want to draw further from existing research on worry (e.g., Hoyer et al., 2001) and consider, for example, how uncontrollable these worries are for parents and adult children as well as whether

they accompanied by physiological indicators of anxiety or particular behaviors.

Finally, all cross-sectional research suffers from the problem of determining causality. Yet, given the paucity of research on worry in parent–adult child ties, this research contributes to our basic understanding of the associations between worry and other variables. Indeed, researchers can draw upon such cross-sectional work to inform future longitudinal studies.

In sum, worry appears to be common between adults and their parents and is associated with relationship characteristics, and interpersonal processes. Notably, it seems that worrying may convey mixed messages to the recipient of concern. Numerous questions remain for future research, including how the experience of worry changes in this relationship over time and the issues that generate worries for parents and adult children. Clearly, to better understand parent–adult child relationships, it is necessary to consider the full range of emotional experiences that occur in these ties, including worry.

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