

Within-Family Variability in Representations of Past Relationships With Parents

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Background. We examined within-family variation in siblings' memories of experiences with parents and their associations with current positive and negative affect.

Methods. Participants were 1,369 adults with at least 1 sibling, aged 26–74 years from 498 families in the MacArthur Study of Midlife in the United States ($M_{age} = 47$ years, 59% women, 94% White).

Results. There was considerable variability in recalled maternal and paternal treatment across the dimensions of affection (intraclass correlation coefficients [ICCs] 0.33 and 0.41, respectively), discipline (ICCs 0.39 and 0.43), and conflict (ICCs 0.24 and 0.26). In turn, recalled parental treatment, particularly affection, made unique contributions to current positive (ICC 0.12) and negative affect (ICC 0.08) over and above individual and familial level characteristics such as offspring demographic characteristics, extraversion and neuroticism, family structure, recalled early family environment, and parents' current status.

Conclusions. Results link adults' memories of experiences with their parents in childhood to their current well-being and highlight the importance of considering within-family models for family theory.

Key Words: MIDUS—Negative affect—Positive affect—Recalled parental treatment—Siblings—Within-family.

THERE is growing recognition of the importance of within-family variability in understanding intergenerational relationships (Davey, Janke, & Savla, 2005; Suito, Sechrist, & Pillemer, 2007). The majority of adults were not raised as the only child in their family (Eggebeen, 1992), and an extensive literature documents that siblings may experience different relationships with parents throughout childhood (McHale, Updegraff, Jackson-Newsom, Tucker, & Crouter, 2000; Richmond, Stocker, & Rienks, 2005; Stocker, 1995; Tucker, McHale, & Crouter, 2003; Volling & Belsky, 1992), and these differences and their effects may persist into adulthood (Davey, Eggebeen, & Savla, 2007; Shaw, Krause, Chatters, Connell, & Ingersoll-Dayton, 2004). In the present study, we examine within-family variability in adult siblings' recalled experiences with their parents and association with positive and negative affect across midlife.

Across the lifespan siblings experience what has been referred to as a "shared environment" in which they all are exposed to the same environmental factors, such as parents' average level of affection and discipline, economic status, and other characteristics of their environment that work to create similarities between siblings (Daniels & Plomin, 1985). In addition to genetic differences (Pike, Manke, Reiss, & Plomin, 2000), siblings also have nonshared experiences characterized by those environmental factors that work to make siblings from the same family different from one another (Dunn & Plomin, 1990; Rowe & Plomin, 1981). Nonshared experiences include siblings' relative treatment

by their parents (i.e., favored vs. unfavored) and changes that occur in the home environment at different ages for each sibling (e.g., parental health may decline after older siblings are grown, and younger siblings may experience a sickly parent in adolescence; Dunn, 1993). A goal of this study is to consider how two aspects of nonshared environment (NSE), adult siblings' recollections of parental treatment and characteristics of their home environment, are connected to current positive and negative affect.

Research on differential treatment in childhood highlights its importance for individual well-being (McHale et al., 2000), but the extent to which perceived differences persist into adulthood (Boll, Ferring, & Filipp, 2005; Cicirelli, 1995) and whether these disparities are associated with current well-being are unclear. On the one hand, perceived differences may diminish over time. Parents clearly differentiate between younger and older siblings in early childhood, but as siblings enter adulthood, parents may treat them more comparably (Dunn & Plomin, 1990) or children may come to accept perceived disparities in treatment as a stable family dynamic or eventually reappraise these relationships in adulthood (Levine & Bluck, 1997; Piazza, Charles, & Almeida, 2007). On the other hand, theorists argue that once families establish patterns of differential treatment when offspring are young, it is difficult to break these patterns in adulthood (Fingerman & Bermann, 2000; Troll, 1996). Indeed, studies find that adults retain distinct ideas about who was the favorite sibling in the family (Bedford,

1992; Sutor & Pillemer, 2000; Sutor, Sechrist, Steinhour, & Pillemer, 2006). In childhood, less favored siblings may suffer emotionally, experience decreased self-esteem, and exhibit behavioral problems (Brody, Stoneman, & Burke, 1987; McHale et al.; Stocker, 1995; Tamrouti-Makkink, Dubas, Gerris, & van Aken, 2004). Other studies find that adult children who feel even slightly favored report better well-being. We expect that offspring with memories of being treated more poorly than their siblings in childhood would fare worse on indicators of positive and negative affect in midlife, over and above average recalled levels of treatment by parents within the family.

Previous studies suggest that parental differential treatment may vary by domain (Hamilton-Giachritsis & Browne, 2005; McHale et al., 2000; Tucker et al., 2003). Parents may not only favor one sibling with greater affection but also discipline that sibling more often. Differential treatment may exist with regard to affection, but not with regard to discipline. Moreover, studies suggest the domain in which differential treatment occurs has implications for adjustment in childhood (Tucker et al.). Most studies of adults' past relationships with parents have been confined to memories of affection (e.g., Andersson & Stevens, 1993; Rossi & Rossi, 1990; Shaw et al., 2004) without considering other kinds of experiences, but studies considering adults' memories of problems with parents have found that adults readily recall negative aspects of their relationship experiences (Amato, 1991; Fingerman, 1997; Whitbeck, Simons, & Conger, 1991). Given the multifaceted qualities of parent-offspring relationships, this study focused on siblings' memories of parental affection, discipline, and conflict. Of course, these memories are reconstructed in the present and may reflect present situations as well as past ones (Andersson & Stevens, 1993; Field, 1981; Halverson, 1988). Yet, regardless of their accuracy, recollections of prior experience may be important for understanding positive and negative affect for individuals as well as the nature of their relationships with others in adulthood (Amato, 1991; Brewin, Andrews, & Gotlib, 1993; Shaw et al., 2004).

We compare differences in memories of offsprings' relationships with parents "within the same family" to compare siblings' memories of parental treatment above and beyond family characteristics. Thus, we considered (a) characteristics which may vary across siblings within the same family and (b) characteristics which vary across siblings between families.

Characteristics that vary within families: Individual characteristics of each sibling we could examine were (a) child demographic characteristics (e.g., age, gender, marital status, educational attainment, and employment or parental status) and (b) child personal characteristics (e.g., personality and health). We also considered birth order, which has been linked with parental differential treatment in childhood (Kowal, Krull, & Kramer, 2004; McHale, Crouter, McGuire, & Updegraff, 1995; Tucker et al., 2003).

Age was included because younger siblings tend to be favored in early childhood, but it is not clear whether these

effects continue throughout adolescence and into adulthood. Gender was included because mothers tend to favor daughters over sons, and fathers tend to favor sons (Harris & Morgan, 1991; Lytton & Romney, 1991; Siegal, 1987; Tucker et al., 2003). Finally, adult siblings vary in their current characteristics (e.g., education, employment, marital status, and parental status), and variability in these characteristics may be associated with differences in ties to parents as well as predict their current well-being (Belsky, Jaffee, Caspi, Moffitt, & Silva, 2003).

Siblings also bring different features to their relationships with their parents that may carry over into differential treatment. Evidence suggests that parents favor easygoing children with more love and nurturance beginning at an early age (Brody et al., 1987; Brody, Stoneman, & McCoy, 1992a, 1992b) and are less responsive to difficult or anxious babies (Rutter et al., 1997). Continuity of individual differences in temperament or personality is beyond the scope of this study (Angleitner & Ostendorf, 1994; Mroczek, Spiro, & Griffin, 2006), but we consider whether adult personality characteristics are associated with memories of prior experiences with parents. Finally, prospective as well as cross-sectional studies have shown that individuals' assessment of their general health and comparative self-rated health are important predictors of their later social and psychological well-being (Benyamini, Idler, Leventhal, & Leventhal, 2000) and even subsequent mortality (Mossey & Shapiro, 1982). We therefore include these two variables as a measure of the personal characteristic of each sibling in the family.

Characteristics that vary between families: Previous research has shown that parents with more education are less likely to treat siblings differently based on gender (Harris & Morgan, 1991), so we expect siblings' memories of ties to be associated with parents' education. We also include parents' health and work involvement when children were young to provide information about the earlier family environment. We added parents' current health status to our model because this might be associated with the recollection of memories of parental treatment and relationships (Davey et al., 2005). Finally, we consider family-level characteristics such as sibship size and gender composition. Previous work has shown that smaller sibships are characterized by greater parental differentiation than larger ones (Freese, Powell, & Steelman, 1999; Harris & Morgan, 1991) and that the balance of sons and daughters shapes parent-offspring ties in adulthood (Connidis, Rosenthal, & McMullin, 1996).

In summary, we used within- and between-family comparisons to address the following research questions: (a) What proportion of the variability in recalled parental treatment and positive and negative affect is explained by family membership? (b) What within-family and between-family factors predict variability in adults' recollections of maternal and paternal affection, discipline, and conflict? and (c) To what extent are recollections of parental treatment

associated with current positive and negative affect, controlling for both within-family and between-family characteristics?

METHODS

Data are drawn from a study of siblings conducted as part of the National Survey of Midlife Development in the United States (MIDUS) sponsored by the MacArthur Foundation Research Network on Successful Midlife Development. The initial phase of the study included a random probability sample of 3,485 English-speaking, noninstitutionalized adults ages 25–74 years, oversampling men and older respondents. A study of siblings was derived from this initial sample.

By design, the MIDUS sibling sample was confined to families where siblings shared the same biological mother and father. As a result, it provides a more conservative test of parental differential treatment than might be the case if step or half siblings were included. Five hundred and twenty-nine of the MIDUS participants who reported that they had one or more living biological siblings were randomly selected for this study. Siblings were recruited by asking these MIDUS participants to provide contact information and to personally communicate with their siblings about participation before a recruiter called. Nine hundred and fifty-one of these siblings ages 25–74 years agreed to participate, for a total of 1,480 individuals. Based on participants' reports of the number of siblings they actually had while growing up, this sample represents over 88% of the siblings available in these 529 families (MIDUS did not solicit information regarding sibling mortality). As a result of this inclusion criterion, participants in the sibling data set were more likely to have grown up with both parents (83%) than nonsibling MIDUS participants (75%).

To ensure that the overall sample was representative of each family size, we used fertility patterns for the mother's birth cohort to adjust the MIDUS sampling weights to accurately reflect the number of only-child families (Taeuber, 1996). Families which included twins ($N = 31$ families represented by 98 siblings) and only children ($N = 234$) were excluded from analysis. Our results were essentially identical when only children were included in the sample. An additional 13 cases were excluded because of inconsistencies regarding sibship characteristics which we were unable to resolve. Our final sample thus consisted of data from 498 families, for an overall sample size of 1,369.

As with almost any large, nationally representative survey, the MIDUS data set contains partially missing observations. While no single variable in our study was missing for a large proportion of our sample, use of listwise deletion with a large number of variables is not recommended (e.g., Acock, 2005; Schafer & Graham, 2002) and would have resulted in the loss of a relatively large number of observations. As a result, we constructed five imputed data sets

(Schafer, 1997). Analyses were then run separately for each imputed data set and results combined using multiple imputation inference. This approach allows for valid parameter estimates to be obtained while retaining an appropriate amount of uncertainty in standard errors due to missing observations.

Procedure

Participants completed three research protocols: one 30-minute telephone interview and two self-administered questionnaires sent by mail. Questions used in this study were distributed throughout the research battery. The original MIDUS participants completed this battery first, and their siblings completed the same battery approximately 10–15 months later.

Measures

Because the preceding literature review points to a wide variety of sources of both differential recalled parental treatment and positive and negative affect, we included measures of each source in our statistical models, as they were available in the MIDUS data set.

Predictor Variables

"Child demographic characteristics" included age in years, whether the child was a daughter (0 = no, 1 = yes), whether the child was currently married (0 = no, 1 = yes), the highest grade of school or year of college completed (1 = some grade school to some high school, 2 = GED or graduated high school, 3 = some college, 4 = graduated college to other professional degree or doctorate), whether the child was currently employed (0 = no, 1 = yes), the number of marriages, and whether the child was a parent (0 = no, 1 = yes).

"Child personal characteristics" included measures of neuroticism, extraversion, perceived self-rated health (coded as 1 = poor to 5 = excellent), and perceived health relative to age-peers (1 = much better to 5 = much worse). The Neuroticism scale ($\alpha = .74$) consists of items measuring responses to the question: "Please indicate how well each of the following describes you: Moody, Worrying, Nervous, and Calm [reverse-scored]." Extraversion ($\alpha = .78$) was measured using the same item stem question and the adjectives outgoing, friendly, lively, active, and talkative (Lachman & Weaver, 1997).

To assess "family structure," we initially considered a range of variables based on theory and previous research. For example, we were able to consider family size, coded as the number of siblings. Birth order was not significant in any model, so it was not retained. Gender composition of the sibship was initially considered in a variety of ways, based on Steelman, Powell, Werum, and Carter (2002). We considered whether there were any daughters, the proportion

of male siblings, and the proportion of opposite-sex siblings. In the end, only the last variable was retained. We also considered spacing of children within the sibship, coded as total span between oldest and youngest sibling, average age gap between siblings, and age gap with closest sibling. None of these was a significant predictor in our models. Thus, the final family structure variables retained in our model were family size and proportion of opposite-sex siblings.

Several indicators of “recalled family environment” were available in the MIDUS data set. Specifically, we had indicators of maternal and paternal health status when the child was 16 (“Looking back to when you were 16, how would you rate your biological [mother’s/father’s] health at that time?” 0 = deceased, 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent), maternal and paternal educational attainment (coded as 1 = no school/some grade school to 12 = PhD or other professional degree), and maternal and paternal work involvement during childhood (“How much of your childhood did [your mother/father] either work for pay or in a family business?” 1 = not at all to 5 = all). The only two indicators regarding “parents’ current status” that could be coded for all individuals was whether the mother and father were currently still living (0 = no, 1 = yes).

Outcome Variables

Recalled parental treatment.—Our first set of models predicted “quality of maternal and paternal relationships” across three dimensions. Siblings rated the “degree of affection” received in childhood from each parent. This index was developed for the MIDUS study and included five items pertaining to parental affection (Rossi, 2001). For example, participants provided a global rating of the quality of the relationship with each parent in response to the question: ‘How would you rate your relationship with your mother during the years when you were growing up using a scale of 1 to 5 (1 = poor, 5 = excellent)?’ Other items assessed ability to confide in parent, parental expression of love and affection, empathy concerning problems, and time and attention provided (α for mothers and fathers = .90 and .92, respectively). Participants also completed a 5-item index of “discipline” received from each parent (Rossi, 2001). These items were rated on a 4-point scale (1 = a lot, 2 = some, 3 = a little, 4 = not at all) and included harshness of discipline, consistency of discipline, being allowed to engage in activities that other children the same age were allowed to play, and so forth (α = .73 and .79 for mothers and fathers, respectively). A final index of “conflict” with the parent was derived from a 3-item version of Straus’s (1979) Conflict Tactics Scale, which assessed emotional, physical, and severe physical conflict with the mother and father. Each dimension of conflict was assessed with a single item. For example, emotional conflict was assessed by asking participants to indicate how often their mother/father: insulted or swore at them,

sulked or refused to talk to them, did something spiteful, threatened them, or stomped out of the room. Participants rated the frequency of such behaviors on a 4-point scale (4 = never, 3 = rarely, 2 = sometimes, 1 = often). Physical conflict included pushing, grabbing, slapping, and throwing objects. Severe physical conflict involved being kicked, bitten, or hit you with a fist or other object, beat up, choked, burned, or scalded. We recoded each item as 0 = never, 1 = all other responses, and summed the items across emotional, physical, and severe physical conflict to generate an indicator of level of conflict in which each parent was reported to have engaged. Thus, scores could range from 0 (none of the behaviors ever happened) to 3 (conflict occurred in each of the three domains at least occasionally; α for dichotomized items = .65 and .68 for mothers and fathers, respectively).

In order to differentiate overall family levels of maternal and paternal affection, discipline, and conflict from the differential experiences of specific children within those families, we also calculated average levels of affection, discipline, and conflict among all siblings in the family and relative (i.e., deviations from the family mean) treatment compared with one’s siblings (i.e., favored vs. unfavored). Thus, all offspring from the same family would have the same average levels of recalled parental treatment, but each offspring within the same family could have different relative levels of recalled parental treatment.

Individual positive and negative affect.—Measures of current positive and negative affect were used to assess individual well-being, after preliminary analyses indicated that measures of variables such as depressive symptoms had very low means and little variability in the sample. Participants rated their positive and negative affect during the past 30 days using 6-item, 5-point scales (1 = all the time, 5 = none of the time). Positive feelings included being cheerful, in good spirits, extremely happy, satisfied, and full of life. Items assessing distress included feeling nervous, so sad nothing could cheer you up, hopeless, restless, and fidgety. Development of these measures has been reported previously (Mroczek & Kolarz, 1998; α = .91 and .87 for positive and negative affect, respectively). Descriptive statistics for all study variables are presented in Table 1.

Analysis Plan

To account for the nonindependence of observations from multiple siblings within the same family, we used generalized estimating equations to estimate all models (see Liang & Zeger, 1986; Szinovacz & Davey, 2001). This class of models is very flexible, permitting a wide variety of outcome variables (continuous, categorical, etc.) and error structures (exchangeable, autoregressive, etc.). Additionally, as estimated using the Stata software package, it was possible to obtain robust (to violations of the specified error structure) standard error estimates.

Table 1. Descriptive Statistics for Study Variables

Variable (Intraclass Correlation Coefficient)	<i>M</i>	<i>SD</i>
Outcome variable		
Mother's affection (0.33)	3.10	0.67
Mother's discipline (0.39)	2.85	0.64
Mother's conflict (0.24)	1.02	1.05
Father's affection (0.41)	2.70	0.80
Father's discipline (0.43)	2.85	0.77
Father's conflict (0.26)	1.15	1.11
Positive affect (0.12)	20.43	4.32
Negative affect (0.08)	9.17	3.55
Offspring demographics		
Age	47.00	12.88
Daughter	0.59	0.49
Married	0.73	0.44
Educational attainment	2.92	0.93
Employed	0.61	0.49
No. of marriages	1.13	0.65
Any children	0.83	0.37
Non-White	0.06	0.24
Offspring personal characteristics		
Neuroticism	2.19	0.65
Extraversion	3.17	0.56
Self-rated health	3.58	0.96
Age-relative health	2.30	0.87
Family structure		
Family size	4.47	2.40
% Opposite-sex siblings	0.49	0.32
Recalled family environment		
Mother's health when child 16	3.23	2.37
Father's health when child 16	2.53	2.47
Mother's education	4.92	2.49
Father's education	4.70	2.97
Mother's work involvement	2.51	1.45
Father's work involvement	4.83	0.49
Parents' current status		
Mother living	0.65	0.48
Father living	0.51	0.50
<i>N</i>	1,369	

Note: *SD* = standard deviation.

Our analysis proceeded in three distinct steps. To address our first research question, regarding the proportion of variance in each of our outcomes which could be explained by family membership, we estimated intercept-only models (i.e., no predictors) to obtain these estimates directly (Table 1). In order to address our second research question, regarding within- and between-family predictors of recalled parental treatment, we estimated separate models for each dimension of recalled maternal and paternal treatment (Table 2). Affection and discipline were treated as continuous variables, and conflict was treated as ordinal. These variables, in turn, became predictors for our models predicting positive and negative affect to address our third research question. For these analyses, we included both average and relative levels of recalled parental treatment as predictor variables in order to differentiate the effects of between-family and within-family predictors, respectively (Table 3).

RESULTS

Proportion of Variability Shared Within Families

A number of approaches can be used to reflect within-family similarity (cf. Maguire, 1999). Hox (2002) suggests that one useful way is the intraclass correlation coefficient (ICC), which can be interpreted as the expected correlation between two units (i.e., siblings) from within the same group (i.e., family). As can be seen in Table 1, there was considerable within-family similarity in recalled parental treatment. Specifically, the ICC was 0.33 for recalled maternal affection, 0.39 for maternal discipline, and 0.24 for maternal conflict. ICC values were similar but consistently higher for fathers, as 0.41, 0.43, and 0.26 for affection, discipline, and conflict, respectively. Consistent with expectations, family membership was somewhat less predictive of variations in neuroticism (0.17) and extraversion (0.19) and even less so for positive and negative affect, with ICC values of 0.12 and 0.08, respectively. Overall, then, this suggests that family is an important source of common variance in recalled parental treatment.

Predictors of Variability in Recalled Parental Treatment

Having established that a considerable proportion of the variation in recalled parental treatment can be explained by family membership, we next identified predictors of this variation to address our second research question. Results are presented in Table 2.

Maternal affection.—Several demographic characteristics predicted recalled maternal affection. On average, daughters reported lower maternal affection than sons ($b = -0.19, p < .01$). Married children recalled mothers as more affectionate ($b = 0.15, p < .01$), but subsequent marriages were associated with lower recalled maternal affection ($b = -0.12, p < .01$). Additionally, individuals recalled mothers as less affectionate if they were themselves parents ($b = -0.18, p < .01$). Child personal characteristics were also important. Individuals recalled greater maternal affection if they were lower on neuroticism ($b = -0.07, p < .05$) and higher on extraversion ($b = 0.18, p < .01$). None of the family structure characteristics were significant predictors of recalled maternal affection. Recalled family environment, however, included several significant predictors. Children recalled mothers as being more affectionate if they also reported that fathers were in better health when the child was 16 ($b = 0.05, p < .05$) and mothers had more formal education ($b = 0.04, p < .05$).

Maternal discipline.—None of the offspring demographic characteristics predicted recalled maternal discipline. In terms of offspring personal characteristics, discipline was perceived as stricter if offspring were more extraverted ($b = 0.14, p < .01$). Offspring recalled their mothers to be stricter when fathers had lower formal education ($b = -0.03,$

Table 2. Predictors of Recalled Parental Treatment

	Mothers			Fathers		
	Affection	Discipline	Conflict	Affection	Discipline	Conflict
Offspring demographics						
Age	0.00	0.00	-0.02*	0.01*	0.00	-0.02*
Daughter	-0.19**	-0.01	-0.13	-0.07	-0.15**	-0.56**
Married	0.15**	0.06	-0.07	0.16**	0.17**	-0.01
Educational attainment	-0.02	-0.02	0.01	-0.07*	-0.01	0.04
Employed	-0.04	0.04	0.12	-0.01	0.07	0.11
No. of marriages	-0.12**	-0.02	0.13	-0.09*	0.00	0.19
Any children	-0.18**	0.02	-0.05	-0.14	-0.09	-0.06
Non-White	0.08	0.22	0.04	0.14	-0.04	-0.62
Offspring personal characteristics						
Neuroticism	-0.07*	0.04	0.55**	-0.05	0.04	0.51**
Extraversion	0.18**	0.14**	0.14	0.22**	0.14**	0.08
Poorer age-relative health	0.00	-0.04	0.00	0.01	-0.06*	-0.10
Self-rated health	-0.01	-0.03	0.00	-0.02	-0.05	-0.11
Family structure						
Family size	0.00	0.00	0.12**	-0.03*	0.03*	0.16**
% Opposite-sex siblings	0.05	-0.02	-0.65**	-0.05	0.00	-0.57**
Recalled family environment						
Mother's health when child 16	0.02	0.01	-0.09*	0.02	0.00	-0.01
Father's health when child 16	0.05**	0.00	-0.02	0.04*	0.01	-0.14*
Mother's education	0.04**	0.03*	0.01	0.02	0.01	0.02
Father's education	0.00	-0.03*	-0.03	0.03	0.00	-0.04
Mother's work involvement	-0.02	-0.03	-0.01	-0.02	-0.01	0.01
Father's work involvement	0.03	-0.03	-0.03	0.08	0.02	-0.13
Parents' current status						
Mother living	-0.15	-0.04	0.50*	-0.06	-0.04	0.04
Father living	-0.14	0.13	-0.07	-0.22	0.20	0.59
Intercept	2.63**	2.59**	0.61	1.68**	2.26**	-0.86
Cut 2			1.60			0.07
Cut 3			3.14**			1.46
$\chi^2(22)$	140.21	61.64	74.52	103.85	82.67	98.94

Note: * $p < .05$; ** $p < .01$.

$p < .05$), but mothers had higher education ($b = 0.03$, $p < .05$). No other recalled family environment characteristics were associated with maternal discipline.

Maternal conflict.—Older offspring recalled less maternal conflict ($b = -0.02$, $p < .05$) and offspring higher on neuroticism recalled more maternal conflict ($b = 0.55$, $p < .01$). The higher the proportion of opposite-sex siblings ($b = -0.65$, $p < .01$) and smaller the families ($b = 0.12$, $p < .01$), the lower the recalled maternal conflict. Recalled conflict was lower if mothers were in better health when the offspring was 16 ($b = -0.09$, $p < .05$).

Paternal affection.—Older offspring ($b = 0.01$, $p < .05$), married offspring ($b = 0.16$, $p < .01$), those with less formal education ($b = -0.07$, $p < .05$), who had fewer previous marriages ($b = -0.09$, $p < .05$), and were more extraverted ($b = 0.22$, $p < .01$) recalled greater paternal affection. Siblings from smaller families ($b = -0.03$, $p < .05$) recalled their

fathers to be more affectionate. Offspring also recalled their fathers to be more affectionate if their fathers were in better health when the offspring was 16 ($b = 0.04$, $p < .05$).

Paternal discipline.—Sons ($b = -0.15$, $p < .01$) and married offspring ($b = 0.17$, $p < .01$) recalled stricter paternal discipline, as did offspring who were more extraverted ($b = 0.14$, $p < .01$) and those in poorer self-rated health ($b = -0.06$, $p < .05$). Discipline was recalled to be more strict ($b = 0.03$, $p < .05$) when offspring came from larger families. No recalled family environment variables predicted recalled paternal discipline.

Paternal conflict.—Younger offspring ($b = -0.02$, $p < .05$) and sons ($b = -0.56$, $p < .01$) recalled more conflict with fathers, as did individuals higher in neuroticism ($b = 0.51$, $p < .01$). Offspring recalled less paternal conflict if they had more opposite-sex siblings ($b = -0.57$, $p < .01$) and smaller families ($b = 0.16$, $p < .01$). Recalled conflict was lower if

Table 3. Predictors of Positive and Negative Affect

	Positive Affect	Negative Affect
Offspring demographics		
Age	0.02	-0.02
Daughter	0.25	-0.10
Married	1.33**	-1.05**
Educational attainment	-0.23	-0.09
Employed	0.09	-0.39
No. of marriages	-0.27	0.15
Any children	-0.20	-0.09
Non-White	0.50	0.89
Offspring personal characteristics		
Neuroticism	-2.69**	2.46**
Extraversion	1.80**	-0.55**
Poorer age-relative health	0.43**	-0.21
Self-rated health	-0.50**	0.52**
Family structure		
Family size	0.03	0.00
% Opposite-sex siblings	0.02	-0.06
Recalled family environment		
Mother's health when child 16	0.00	0.05
Father's health when child 16	-0.07	0.03
Mother's education	-0.08	0.04
Father's education	0.01	0.04
Mother's work involvement	-0.02	-0.01
Father's work involvement	0.46	-0.21
Parents' current status		
Mother living	0.11	-0.03
Father living	0.68	-0.88
Recalled parental treatment		
Average maternal affection	0.75**	-0.30
Average maternal discipline	0.52*	-0.10
Average maternal conflict	0.21	0.04
Average paternal affection	-0.01	0.01
Average paternal discipline	0.05	0.10
Average paternal conflict	-0.26	0.09
Relative maternal affection	0.62*	-0.91**
Relative maternal discipline	-0.74**	0.19
Relative maternal conflict	-0.05	0.04
Relative paternal affection	0.31	-0.08
Relative paternal discipline	-0.01	0.08
Relative paternal conflict	-0.28	0.11
Intercept	13.27**	8.98**
$\chi^2(34)$	914.85	657.59

Note: * $p < .05$; ** $p < .01$.

fathers were in better health when the offspring was 16 ($b = -0.14$, $p < .05$).

Given the systematic nature of variations within and between families in recalled parental treatment, we were next interested in determining the extent to which recalled parental treatment was associated with positive and negative affect. Results are presented in Table 3.

Positive affect.—Married individuals reported higher levels of positive affect than did those without a spouse ($b = 0.133$, $p < .01$). Individuals reported higher levels of positive affect if they were lower on neuroticism ($b = -2.69$, $p < .01$), higher on extraversion ($b = 1.80$, $p < .01$), and in

better self-rated ($b = 0.43$, $p < .01$) and age-relative health ($b = -0.50$, $p < .01$). At the family level, higher average maternal affection ($b = 0.75$, $p < .01$) and stricter maternal discipline ($b = 0.52$, $p < .05$) were both associated with higher levels of positive affect. Offspring who reported higher relative levels of maternal affection than their siblings ($b = 0.62$, $p < .05$), but lower levels of maternal discipline ($b = -0.74$, $p < .01$) reported higher positive affect.

Negative affect.—Offspring who were married reported lower levels of negative affect ($b = -1.05$, $p < .01$). Individuals higher on neuroticism ($b = 2.46$, $p < .01$), lower on extraversion ($b = -0.55$, $p < .01$), and in poor self-rated ($b = 0.52$, $p < .01$) health reported more negative affect. No family structure or recalled family environment variable was associated with negative affect. In terms of recalled parental treatment, those recalling greater maternal affection than their siblings also reported lower levels of negative affect ($b = -0.91$, $p < .01$).

DISCUSSION

In this study, we set out to identify the extent to which recalled parental treatment could be explained by family membership, to identify within- and between-family predictors of these variations and, in turn, the extent to which shared and unique aspects of recalled parental treatment were associated with current positive and negative affect. This study extended previous research in several regards. First, it employed a within-family design to investigate the correlates of differential treatment, both between and within families simultaneously. Second, it extended consideration of the effects of differential treatment into midlife, examining a representative sample of adults aged 26–74 years. Third, our models included several of the most important potential confounds likely to affect differential treatment using retrospective data regarding recalled parental treatment. Specifically, we considered the role of child social index variables, child psychological variables, particularly personality and physical health, family structure, recalled early family environment, and parents' current status.

What Proportion of the Variability in Recalled Parental Treatment and Positive and Negative Affect Can Be Explained by Family Membership?

As noted at the beginning of this paper, a number of factors are potentially confounded in between-family studies examining recalled parental treatment and its associations with positive and negative affect. Well-adjusted parents may tend both to parent well and to have well-adjusted children. To what factor or factors should we attribute positive outcomes among offspring? Similarly, it is important to recognize that families develop over time. Thus, the family environment experienced by the oldest child may differ dramatically from the environment experienced by the

youngest child. However, effects of birth order and family size are confounded in between-family designs.

Although differential treatment from parents is well established earlier in the lifespan the persistence of these differences into midlife is not clear. In this study, we found that a considerable proportion of the variance, typically one quarter to two fifths, was associated with family membership, consistent with previous research (e.g., McCrae & Costa, 1988b), and can thus be attributed to sources such as parents and shared family environment. The remainder, however, is unique to each child within the family. As would be expected, the unique component is substantially larger for the more situationally determined constructs of positive and negative affect and intermediate for the theoretically mediating constructs of neuroticism and extraversion (cf. Block, 1971; McCrae & Costa, 1988b).

The behavioral genetics literature reveals that although siblings share an environment, individual experiences also account for a considerable portion of the variance in specific outcomes similar to positive and negative affect and that this proportion may increase in adulthood. Indeed, the ICCs of 0.20 to 0.40 are similar or even relatively high compared with what other studies in this area find (e.g., McCrae & Costa, 1988b).

Socialization theories assume that shared experiences lead to similarities among siblings. Our finding that the majority of variance in each outcome is explained by within-family rather than between-family variability is consistent with the results from a substantial behavioral genetics research base that consistently indicates that most variance lies within rather than between families (Maccoby & Martin, 1983) and results in vast differences between siblings raised in the same family with regard to personality and well-being (Dunn & Plomin, 1990; Plomin & Daniels, 1987). These differences between siblings in the same family are believed to be due largely to four sources of NSE: differential treatment, differential sibling experiences, differential peer experiences, and accidents and illnesses unique to the individual (Plomin & Daniels, 1987). NSE experiences are more common than shared experiences and accumulate over time to create increasing differences between siblings across development. Similarities between siblings are primarily believed to be the result of genetic influences rather than a common family environment.

What Individual and Family Factors Predict Variability in Adults' Recollections of Maternal and Paternal Affection, Discipline, and Conflict?

Given that there is substantial variability both within and between families in recalled parental treatment, we next considered which factors were systematically associated with the dimensions of recalled affection, discipline, and conflict with mothers and fathers. We find that adult siblings within the same families often have different recalled

experiences with parental treatment, that these differences are systematic in nature, and that predictors differ both across domains of treatment and between mothers and fathers. Looking toward child demographic characteristics, we find that having a spouse generally appears to be linked with recalled parental treatment in a positive way, being associated with maternal and paternal affection, as well as paternal discipline. By contrast a greater number of previous marriages is associated with recollection of less affectionate parenting by both parents. In addition to spouses, the presence of biological children is also associated with lower recalled maternal affection. Whether this is evidence that current social relationships are important in determining how early relationships are (re)interpreted or that early experiences shape current relationship functioning requires longitudinal data (Andersson & Stevens, 1993; Main, Kaplan, & Cassidy, 1985).

Personality also appears to have a consistent role in recalled differential treatment, with extraversion being most strongly associated with the positive aspects of parenting by mothers and fathers, and neuroticism most consistently associated with the negative aspects of parenting, specifically maternal and paternal conflict. These findings are consistent with a variety of previous research suggesting that parenting and person characteristics color interpretations of events and life circumstances and vice versa (e.g., Halverson, 1988; McCrae & Costa, 1988a, 1988b). Similarly, although we cannot rule out the possibility that a positive home environment in early life contributes to high extraversion and low neuroticism, we can at least say that recalled parenting is independently associated with midlife positive and negative affect even controlling for personality. We find evidence consistent with previous research suggesting systematic differences in recalled parental treatment as a function of personality characteristics. Specifically, offspring higher in extraversion recalled both mothers and fathers as more affectionate and stricter disciplinarians, whereas offspring higher in neuroticism recalled greater conflict with both parents and less affection from mothers.

One of the unique aspects of this study was the use of a within-family design in order to consider the importance of several aspects of family structure as predictors of recalled parental treatment. Several consistent findings emerged. Specifically, fathers were recalled as less affectionate in larger families. Both recalled discipline and conflict were lower for offspring with a higher proportion of opposite-sex siblings. Preliminary models did not find any evidence for the importance of factors such as age spacing between siblings or effects of birth order; however, other within-family research from the mother's perspective has suggested that the position of youngest child may hold special significance (Suito et al., 2007).

Because so few studies have applied within-family designs to consider differences in recalled parental treatment in adulthood, there is little theoretical or conceptual

guidance regarding which aspects of the family environment are likely to be most important. As well, existing surveys such as MIDUS include relatively few indicators of the recalled early family environment. Those indicators that were available to us were associated with some aspects of recalled parental treatment, but not all. To understand the importance of recalled family environment, it is important to recognize that families are systems, and as a result many influences may be indirect as well as direct. For example, it is fathers' health that is associated with recalled maternal affection. Fathers who are in better physical shape may also have higher earnings or be more involved in parenting, improving the overall family environment.

Likewise, fathers' educational attainment predicts both lower recalled maternal discipline and less recalled conflict with fathers. Future research, then, should consider ways of more directly assessing the early family environment in order to better understand the nature of these associations. One immediate implication of these findings, however, is that later-born children are likely to experience lower levels of maternal discipline and paternal conflict than their older siblings because parents' educational attainment is higher (as are income and socioeconomic status), on average, for later-born offspring than earlier-born offspring.

In the current study, it is notable that age was not consistently associated with recalled parental treatment. The only age effect we detected involved conflict with mothers and fathers; older adults recall slightly less conflict. This finding is consistent with other studies of remembered negative experiences; prior research has found that older adults recall bad experiences less negatively than younger adults do (Levine & Bluck, 1997; Piazza et al., 2007). Clearly, recalled differential treatment by parents persists into midlife. But is there evidence that this recalled treatment exerts independent associations with positive and negative affect over and above the current contextual sources that also affect it?

To What Extent Are Recollections of Parental Treatment Associated With Current Positive and Negative Affect, Controlling for Both Individual and Family Characteristics?

The demographic and personal characteristics associated with positive and negative affect are remarkably consistent. As was found for recalled parental treatment, being married is associated with higher levels of positive affect and lower levels of negative affect and is the only significant demographic predictor. Thus, current relationships with spouse or children might influence the way that past relationships with parents are remembered. Alternatively, childhood experiences with parents may be associated with a greater or lesser likelihood of marrying and/or having children of one's own.

All four personal characteristics were significant for both positive and negative affect, with higher neuroticism

predicting lower positive affect and higher negative affect, higher extraversion predicting higher positive affect and lower negative affect, better self-rated health predicting higher positive affect and lower negative affect, and poorer age-relative health predicting lower positive affect and higher negative affect.

In terms of implications, the fact that memories of childhood experiences show persistent associations with well-being across the full adult range suggests the potency of these experiences in forming life trajectories and experiences. We connect this research to the premise that early experiences with parents in the context of families (i.e., siblings) may have persistent (albeit minor) effects into late life, even after individuals have established ties to spouses and children of their own. Moreover, consistent with prior studies (Shmotkin, 1999), memories of parents may play a role in the well-being of adults even after their parents are deceased.

In contrast, none of the family structure or recalled family environment variables was important for either positive or negative affect. This is consistent with the lower within-family variability observed for these outcomes, compared with recalled parental treatment. Whereas the recalled environment itself was not important, recalled parental treatment within that environment was significantly associated with positive and negative affect, and the results are informative for considering differences within and between families.

Average recalled maternal affection, a between-family characteristic, predicts higher positive affect. Thus, all offspring benefit from growing up in a household where mothers are seen as more affectionate. Relative perceptions of maternal affection, a within-family characteristic, is also important, however, with offspring who report greater levels of recalled maternal affection than their siblings also reporting higher levels of positive affect. In contrast, only higher relative maternal affection predicts lower negative affect. Thus, the benefits of favored status (or at least the perceptions of favored status) continue to have positive implications for well-being into midlife, consistent with what has been found with younger siblings (Stocker, 1995).

Somewhat contrasting findings emerge for the effects of maternal discipline. Average recalled maternal discipline predicts higher positive affect. For all offspring within the family, then, there appear to be benefits of a stricter household. However, there was also a negative association between recalled relative maternal discipline and positive affect. In other words, this is particularly true if mothers were recalled as less strict for oneself than one's siblings. What we cannot discern from these data is how the shared and individual experiences translate into parental behavior. Does strict maternal discipline translate into greater attention and concern and thus predict better current functioning? Did offspring who received stricter maternal discipline from mothers than their siblings exhibit more problematic behaviors in childhood which required greater maternal control, the effects of which carry over into adulthood?

Mothers are more involved with child care and have closer relationships with their children than fathers do. Most early within-family comparisons of differential treatment focused on mothers, but mothers and fathers interact with their offspring in distinctly different ways (Parke, 1978; Siegel, 1987). Research comparing mothers' versus fathers' differential treatment shows that mothers and fathers engage in similar amounts (Brody et al., 1992a, 1992b; McHale et al., 1995). Comparison of mothers versus fathers in various domains, however, reveals that in the domains of affection and temporal involvement, less than half of mothers and fathers reported the same differential treatment pattern (Tucker et al., 2003). Despite these studies, little is known about fathers' role in this dynamic and highlights the importance of including reports of mothers' and fathers' differential treatment.

Limitations

Although the use of a large, representative sample across a wide age range is clearly an important strength of the current study, there are also several limitations. To begin, these data are cross-sectional in nature, limiting the ability to reach any causal inferences because both our predictor variables and outcomes were assessed on the same occasion. In addition to the usual biases associated with retrospective data, which we attempted to control as fully as possible, the measures considered here are still relatively crude with regard to early parental treatment. It is not clear whether the full range of parenting behaviors have been adequately reflected in the positive and negative aspects of parental treatment available in the MIDUS data set. Certainly, too, the measures blur the range and dynamics of earlier experiences either by selecting a specific time point (i.e., age 16) or aggregating across periods of childhood ("How much of your childhood . . ." or "When you were growing up . . ."). Despite these limitations, the current study suggests that representations of past relationships with parents continue to vary in systematic ways both within and between families. In turn, these systematic differences continue to independently predict current psychological well-being across midlife.

Longitudinal data linking childhood relationships with parents to adult outcomes are nearly nonexistent in the United States and certainly not in the types of national studies we have with MIDUS. Therefore, sociologists have commonly used memories of parental relationships as a proxy for ties to parents in childhood, and researchers also commonly refer to these memories as representations of the actual relationship in childhood (e.g., Rossi & Rossi, 1990; Shaw, 2006; Shaw et al., 2004; Willson, Shuey, & Elder, 2003). Thus, our approach represents a somewhat more sophisticated take on the meaning of these variables. As prior sociological research points out, these variables do represent past experiences, but they also represent potential reconstructions of the past (based on present circumstances).

To extend these arguments into implications for the field, we consider the research of scholars who have shown that narrative life construction has implications for health and well-being in late life (e.g., McAdams, 2001). In other words, it is not simply the events we experienced in the past, but the way we view those events that makes a difference for psychological well-being. As this study of siblings suggests, even individuals who grow up in the same household and who share the same parents may have very different ways of constructing or remembering that past, and those memories have implications for their individual well-being.

Directions for Future Research

What remains for future research to address is the precise source of these within-family differences. Whether these differences reflect true long-term effects of parental differential treatment in a fashion consistent with children's NSE (Dunn & Plomin, 1990; Plomin & Daniels, 1987) or whether we are tapping another dimension of the implications of the parent-child tie on well-being in adulthood (Umberson & Chen, 1994) remains to be addressed. Although the measures refer to individual siblings' childhood experiences, these relationships have been (re)interpreted by individuals and their siblings into adulthood and midlife. The subsequent importance of continued sibling (and parental) ties may be every bit as important as the early childhood experiences themselves. In sum, we are aware that the study assessed memories, which probably reflect some truth regarding the early environment as well as factors that have shaped those memories since that time.

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