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Child-Rearing Antecedents of Intergenerational Relations in Young Adulthood: A Prospective Study

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Data gathered from mothers on parenting and family climate when almost 1,000 children in the Dunedin, New Zealand, longitudinal study were 3, 5, 7, 9, 13, and 15 years of age were used to predict intergenerational relations between young adult children (age 26) and their middle-aged parents. Analyses focused on distinct developmental epochs revealed greater prediction from the middle-childhood and early-adolescent periods than from the early-childhood years; most indicated that more supportive family environments and child-rearing experiences in the family of origin forecasted more positive and less negative parent-child relationships (in terms of contact, closeness, conflict, reciprocal assistance) in young adulthood, though associations were modest in magnitude. Some evidence indicated that (modestly) deleterious effects on intergenerational relations of experiencing relatively unsupportive child-rearing environments in 1 but not 2 (of 3) developmental periods studied could be offset by relatively supportive family environments in the remaining developmental periods.

Around the industrialized world, the population of elderly citizens is growing. Because of the health care costs of this segment of the population, it is clear that financial challenges face many nations, including the United States. This reality has underscored the importance of intergenerational relationships, as it is the adult children of the elderly who will primarily be responsible for their support and care (Rossi, 1989; Whitbeck, Simons, & Conger, 1991). Current theory pertaining to intergenerational relations suggests that it is family solidarity—or the cohesiveness or creative

bonds among members of lineage systems (Bengston & Roberts, 1991)—that shapes support and assistance across generations (Whitbeck, Hoyt, & Huck, 1994). Research indicates that affectional and associational forms of solidarity predispose children to provide social support to older parents (Silverstein, Parrott, & Bengston, 1995). Rossi and Rossi (1990) noted that parents and children who are more emotionally intimate (i.e., who have affectional solidarity) tend to have more contact (i.e., associational solidarity) and transfers (i.e., functional solidarity) between them.

Given the importance attributed to family solidarity in theory and research on intergenerational relations in adulthood, it is surprising that questions of variation in contact between generations and the provision of support have not emphasized the shared developmental histories of parents and children before parents are aged and children are adults. Not only has there been a tendency to overlook early family relationships in gerontological research on adult child-parent relationships, caregiving, and exchange (Whitbeck et al., 1994), but most theoretical models of family solidarity (e.g., Bengston & Roberts, 1991) tend to treat families ahistorically (Whitbeck et al., 1991, 1994).

Nevertheless, a variety of developmental and theoretical perspectives suggest that adult child-parent relationships should be affected by the quality of these relationships when offspring were young. More specifically, positive, supportive intergenerational relations in adulthood are assumed to have their origin in harmonious parent-child relations and positive family climate in childhood, including supportive and authoritative rather than authoritarian parenting, as well as close and cohesive rather than conflicted (or detached) family relationships (Caspi & Elder, 1988; Hagestad, 1981; Sroufe & Fleeson, 1986; Whitbeck et al., 1991). Indeed, current developmental thinking emphasizes the significance of open communication between parent and child (Maccoby

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Martin, 1983), especially mutually positive parent and child behavior (Kochanska & Aksan, 1995) during the early years, for fostering the development of relationship skills, including emotion regulation (Eisenberg & Fabes, 1992; Fox, 1994; Thompson, 1988). Current theory also underscores the costs—especially, though not exclusively, during the early years—of overcontrolling, intrusive parenting that stifles children's capacity to express themselves. In fact, existing research links intrusive, controlling parenting to insecure child-parent attachments (see Belsky Cassidy, 1994, for a review). On the basis of such theory and evidence, there would seem to be grounds for presuming that through the fostering of open communication, secure attachment, and thus trusting relations between parent and child, emotionally supportive, authoritative parenting during the early childhood years should lay the foundation for life-long, harmonious parent-child relations.

One would expect, however, that such a foundation, by itself, could assure such relationships, as contemporary developmentalists appreciate the open-ended nature of psychological, behavioral, and relationship development. Thus, what transpires during the middle-childhood years and beyond should also prove influential with respect to intergenerational relations in adulthood. Discipline that is particularly harsh and/or inconsistent is known to undermine emotion regulation and tends to be the hallmark of coercive family processes (Patterson, Reid, & Dishion, 1992; Snyder & Peterson, 1987), conditions that would not be expected to give rise to harmonious intergenerational relations, either in the short- or the long-term. Also important is general family climate, as recent research highlights the fact that security and trust derive not simply from dyadic relationships but from the warmth and supportiveness of the broader family context as well (Davies & Cummings, 1994). Thus, when parents are harsh and/or inconsistent in their discipline and the general emotional climate of the family is one of conflict rather than cohesion and harmony, theory and evidence suggest that middle-age children and particularly adolescents will turn away from their families toward their peer groups, and often problematic peer groups at that, to seek support from others (Brown, Mounts, Johnson, & Steinberg, 1993; Simons, Chao, Conger, & Elder, 1991). To the extent, then, that children become alienated from their families in general and their parents in particular during the middle-childhood and adolescent years as a result of the emotional child-rearing dynamics of the family, one would not expect close relationships between parents and children as they age to be the order of the day.

General support for these arguments about how and why family parent-child experiences in childhood can shape intergenerational relations in adulthood can be found in a handful of studies, most of which rely upon recollections of family life. In Rossi and Rossi's (1990) extensive investigation of exchange patterns among middle-aged adults, they recalled affective quality of family life during adolescence and it positively predicted current assistance patterns between aging parents and middle-aged children. In Whitbeck et al.'s (1991, 1994) research on 450 two-parent families living in small, agriculturally oriented communities or on farms in the American Midwest, middle-aged adults who remembered their aging parents as rejecting—that is, who experienced parental rejection, harsh discipline, and limited parental monitoring—were less likely to report close relationships with their elderly parents and more likely to experience high levels of strain in their relationships with them, both at

the time when child-rearing history was retrospectively assessed, as well as a year later. Moreover, adults who recalled early parental rejection expressed less concern about staying in close touch with their parents and monitoring their parents' well-being.

The significance of such effects of early relationship history on the quality of adult child-parent relationships is evident in other research showing that intergenerational affection (i.e., affectional solidarity) and contact (i.e., associational solidarity) were factors in motivating middle-aged daughters and/or sons to provide support to their aging parents (Silverstein et al., 1995). Thus, the very features of the adult child-parent relationship that Rossi and Rossi (1990) and Whitbeck et al. (1991, 1994) found to be affected by relationship experiences in childhood (at least as recollected) also forecast the support given to aging parents.

A major (and well acknowledged) limit of the previously cited work linking parent-child relations in childhood and/or adolescence with those in adulthood is reliance upon retrospective reports. Not only does much research raise doubts about the validity of such recollections (Radke-Yarrow, Campbell, & Burton, 1970; Rutter, Maughan, Pickles, & Simonoff, 1988), but retrospective data obtained at age 18 from the longitudinal sample whose intergenerational relations are the subject of this article revealed very limited concordance between prospectively obtained measures of the affective quality of early family experience and parent-child relations and the retrospective measures (Henry, Moffitt, Caspi, Langley, & Silva, 1994). Thus, only limited confidence can be placed in the aforementioned findings regarding child-rearing history and intergenerational relations, because no truly long-term prospective investigations from early childhood have been carried out.

Several recent studies have used prospective designs to examine effects of parent-child relations during adolescence upon intergenerational relations in young adulthood, however. Drawing on national survey data collected in the late 1980s and early 1990s, Aquilino (1997, 1999) found that parental support-closeness and democratic discipline when children were 12-18 years of age predicted greater parent-child closeness when children were 18-23 years of age; in contrast, greater restrictiveness and coercive control during adolescence predicted subsequent intergenerational conflict (see also Thornton, Orbach, & Axinn, 1995). Similarly, Tubman and Lerner's (1994) study of 133 middle-class, White, and mostly Jewish families revealed that measures of parent-child relations obtained when children were 18-23 years old predicted intergenerational relations when children were 25-31 years old better than did related measures obtained when children were 16-17 years old. In the current investigation, we examined whether, as might be expected, assessments of parenting, parent-child relationships, and/or family climate assessed closer in time to the measurement of intergenerational relations in young adulthood more strongly predict intergenerational relations than assessments of the child-rearing environment made during early and middle childhood. Unfortunately, the archival data available to address this issue do not afford a rigorous comparative test because measures of the family-rearing environment are not uniform across early childhood, middle childhood, and early adolescence.

The primary purpose of the research reported herein was to examine prospective relations between parenting, family climate, and parent-child relationships in childhood and intergenerational relations in young adulthood, thereby addressing the empirical

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peratives outlined, using data obtained expressly for this purpose as part of the Dunedin Multidisciplinary Health and Development Study (DMHDS) being carried out in New Zealand. More specifically, the current inquiry was designed to (a) examine relations between parenting, family climate, and/or parent-child relationships in childhood—beginning during the preschool years—and intergenerational relations in early adulthood (age 26) and, in so doing, (b) set the stage for continued evaluation of intergenerational relations so that its changing nature can be chronicled as adult children and their middle-aged parents grow older. By relying upon data on parenting, family climate, and/or family relations obtained when study members were 3, 5, 7, 9, 13, and 15 years of age and data gathered on adult child-parent relationships when study members were 26 years of age, we positioned ourselves to determine whether the quality of early family life forecasts the quality of parent-child relationships in young adulthood. During the preschool period, maternal reports of child-rearing attitudes and practices formed the basis of measures of egalitarian and authoritarian parenting. We predicted that parent-child relationships during young adulthood would be characterized by greater contact, closeness, and reciprocal assistance but by less conflict when mothers were more egalitarian and less authoritarian in their parenting during early childhood. Lack of support for such a hypothesis would raise questions about developmental models, especially of relationships, that emphasize the primacy of early experience—within, of course, the confines of the measures used in this inquiry.

Measures obtained from mothers during middle childhood formed the basis of scales of problematic discipline (i.e., harsh, inconsistent) and of the overall emotional climate and relationship context of the family (i.e., cohesion, expressiveness, conflict), with the latter also being available during adolescence. Here we predicted that intergenerational relations would be more positive when family relationships during the middle-childhood and adolescent years were characterized by closeness, expressiveness, and limited conflict, as well as when harsh and inconsistent discipline were the exception rather than the rule. Finally, teenagers' own reports of their ties to their parents provided a means of assessing attachment relationships during adolescence and testing the prediction that parent-child relationships in young adulthood would be closer, more mutually helpful, and less conflicted when adolescents experienced trust and open communication in their relations with their parents rather than alienation.

Although basic psychometric considerations lead to the expectation that assessments obtained closer in time to the measured outcome—that is, those secured during adolescence—would prove most predictive of intergenerational relations in young adulthood, developmental perspectives that emphasize the formative role of early experiences would seem to suggest otherwise. Obviously, these viewpoints are not mutually exclusive. In the final analysis, the fact that neither the few relevant prospective studies (Aquilino, 1997, 1999; Thornton et al., 1995) nor the available retrospective ones (Rossi & Rossi, 1990; Whitbeck et al., 1991, 1994) have secured information on family life prior to adolescence for purposes of predicting intergenerational relations in adulthood means that there is no empirical basis for favoring either the psychometric or the early-experience perspective. It is as a direct result of this unease that we regard even our limited ability—due to time-lagging measurements—to contrast the power of predictors ob-

tained during early childhood, middle childhood, and adolescence as advancing understanding of the developmental antecedents of intergenerational relations.

Method

Participants

The participants in this study were 980 (96%) of the 1,019 surviving study members of the original DMHDS birth cohort and their parents (905 mothers, 838 fathers). Participating mothers represented 97% of the 932 invited to participate; participating fathers represented 97% of the 867 invited to participate. Formal attrition analyses indicated that there have been virtually no significant attrition effects in terms of socioeconomic status (SES), intelligence, family adversity, and various behavioral measures, including aggressive behavior. At the time when data on intergenerational relations in young adulthood were collected from young-adult children and their parents, mothers and fathers, respectively, averaged 52 and 54 years of age.

The history of the DMHDS cohort has been described by Silva (1990) and by Silva and Stanton (1996). The study is a longitudinal investigation of health, development, and behavior of a complete cohort of consecutive births between April 1, 1972, and March 31, 1973, in Dunedin, an urban area of approximately 120,000 inhabitants in the South Island of New Zealand. The 1,037 original study members are representative of the 1,139 children born in Dunedin during the dates indicated in terms of SES and perinatal complications. With regard to social origins, the children's fathers were representative of the social class distribution in the general male population of similar age in New Zealand. With regard to ethnic distribution, the sample members are of predominantly European ancestry. Approximately 7% of the study members now identify themselves as Maori or Polynesian, which matches the ethnic distribution of New Zealand's South Island. (Nearly 90% of the Maori population is concentrated in the North Island.)

Data Collection and Design

Three sets of data need to be distinguished: (a) information on intergenerational relations in young adulthood obtained expressly for the purpose of this particular study from young adults at 26 years of age and from their mothers and fathers; (b) data on parenting, family climate, and/or parent-child relationships gathered during the course of the broader, longitudinal investigation of children at 3, 5, 7, 9, 13, and 15 years of age; and (c) control variables reflecting parental age, health, and child gender and parental status (i.e., has own child) at time of interview.

Intergenerational Relations

When young adults visited the Dunedin research unit for an all-day data collection focused on multiple aspects of their lives and functioning at 26 years of age, 20 min (of purchased research time) was allocated to answering questions, administered in interview format, about their relationship with each of their parents. Study members also supplied names and addresses of their parents, who were then contacted by mail to secure their responses to a set of questionnaires asking the same questions to which their children had responded.

Building upon the work of Bengtson (Bengtson & Harootyan, 1994), we conceptualized parent-child relations in adulthood in terms of intergenerational solidarity (Bengtson & Black, 1973) and assessed these relations by means of Likert-type measurements developed and used by Whitbeck et al. (1991, 1994), Silverstein et al. (1995), and Lawton, Silverstein, and Bengtson (1994) in their retrospective studies of family-of-origin influences on intergenerational relations. To tap associational solidarity, questions focused on the amount of contact between generations; to assess

fectional solidarity, questions about love/closeness and conflict were included; to assess functional solidarity, instrumental and emotional assistance given and received were measured. Especially important is that the measures used in this inquiry (or others quite similar to them) have been shown to be related to a host of theoretically anticipated antecedents, including the quality of family relationships during childhood (Rossi & Rossi, 1990; Whitbeck et al., 1991), exposure to parental divorce (e.g., Roth & Amato, 2001; Kaufman & Uhlenberg, 1998; Webster & Herzog, 1995; Zill, Morrison, & Coiro, 1993), and growing up with single parents and step-parents (White, 1994); they have also been found to generate a substantial degree of correspondence between parent and child reporters (Quilino, 1999). Such findings highlight the validity and utility of the measures to be described and/or the measurement approach adopted for assessing intergenerational relations in this inquiry.

Intergenerational contact was measured with two items answered by each respondent regarding the extent to which the respondent was in face-to-face and phone contact with parents over the past year and a third item regarding whether parent and child got together at Christmas time.

Intergenerational closeness was measured with seven items answered by each respondent regarding the overall quality of the relationship (ranging from *very poor* to *excellent*) and the extent to which each partner in the relationship felt loved and appreciated by the other, could depend upon help from the other were it needed, felt emotionally close to the other, had good communication with the other and shared feelings, felt understood by the other, and understood the other.

Intergenerational conflict was measured by a single item answered by each respondent regarding the extent to which there was conflict, tension, or disagreement in the relationship.

Intergenerational assistance was measured by asking each relationship participant a series of 14 questions about the assistance he or she gave and separately received of the following forms: financial; when sick; with travel; home maintenance; information and advice concerning marriage, friendship, and close relationships; and emotional support when upset.

Because of the reasonably high degree of covariation between parent and child reports on each scale (see Table 1) and our desire to reduce the number of dependent variables subject to analysis while creating dyadic measures of intergenerational relations, the four scores generated for mother-child and the four scores generated for father-child were subject to principal-components factor analysis with varimax rotation. The same dimension-reduction strategy was used in the case of father-child relations. In the case of each parent-child dyad, two clear factors emerged (see Table 2), with high and discriminative loadings for contact and assistance on one and high and discriminative loadings for closeness and conflict on the other. The former was labeled *Functional-Associational Solidarity*, and the latter, *Affectional Solidarity*. *Functional-Associational Solidarity* was formed by standardizing the intergenerational assistance and contact scores and averaging them (for mother-child, $M = .01$, $SD = .45$; for father-child, $M = -.02$, $SD = .52$). *Affectional Solidarity* was formed by standardizing and averaging the intergenerational closeness and conflict scores (for

Table 2

Factor Loadings on Affectional and Functional-Associational Solidarity and Percent Variance Accounted for by Each Component

Variable	Affectional Solidarity	Functional-Associational Solidarity
Mother-child		
Mother contact	-.02	.78
Mother closeness	.73	.32
Mother conflict	-.74	.25
Mother reciprocal	-.02	.73
Assistance		
Child contact	.10	.79
Child closeness	.66	.41
Child conflict	-.71	.09
Child reciprocal	.06	.73
Assistance eigenvalue	2.04	2.65
% variance	25.49	33.06
Father-child		
Father contact	-.02	.80
Father closeness	-.62	.45
Father conflict	.71	.26
Father reciprocal	.05	.71
Assistance		
Child contact	-.06	.79
Child closeness	-.57	.59
Child conflict	.72	.004
Child reciprocal	-.02	.76
Assistance eigenvalue	1.75	2.95
% variance	21.83	36.90

mother-child, $M = -.02$, $SD = .73$; for father-child, $M = -.05$, $SD = .75$). The internal consistency reliability of the summary scores formed on the basis of these results were, respectively, .83 and .86 for mother-child relations and .84 and .87 for father-child relations.

Child-Rearing Antecedents of Intergenerational Relations

Measures of maternal child-rearing practices, parent-child relationships, and/or family climate were available at multiple ages in the DMHDS archive—in particular, when children were 3, 5, 7, 9, 13, and 15 years of age. Thus, we decided to organize measures in terms of three developmental periods—early childhood, middle childhood, and adolescence—by creating composites of measures available at ages 3 and 5 (early childhood), 7 and 9 (middle childhood), and 13 and 15 (adolescence). By adolescence, children also provided information on their relationships with their parents. The multiple indices of each construct were standardized and averaged to create a total of six measures of the child-rearing environment of the family of origin, as detailed below.

Early childhood. When children were 3 and 5 years of age, mothers completed an abbreviated version of Schaefer and Bell's (1958) Parental Attitude Research Instrument. This 35-item questionnaire yielded six internally consistent subscales when factored on the Dunedin sample, which were combined in previous analyses of the DMHDS to form two higher order constructs (Silva, 1976; Stanton & Silva, 1992). *Egalitarian parenting* represents the average of the subscales labeled Encouraging Verbalization, Egalitarianism, and Comradeship and Sharing and reflects the extent to which the mother is open to communications from her child and views the parent-child relationship as a "two-way street" in which influence not only flows from parent to child but from child to parent. *Authoritarian parenting* represents the average of the subscales labeled Excluding

Table 1
Relations Between Parent and Child Reports of Intergenerational Relations

Variable	Agreement	
	Mother-child	Father-child
Contact	.65***	.65***
Closeness	.46***	.47***
Reciprocal assistance	.43***	.44***
Conflict	.33***	.22***

$p < .001$

Outside Influences, Intrusiveness, and Acceleration of Development and reflects the extent to which the parent is over-controlling and excessively demanding of the child, expecting the child to be "well behaved" and highly obedient, following strictly the unyielding edicts of the parent.

Test-retest reliability assessments revealed these higher order scales to be highly stable across the 2-year period from ages 3 to 5 ($r_s > .65$) in the Dunedin sample (Stanton & Silva, 1992). Evidence of the validity of the scales comes from Stanton and Silva's DMHDS findings indicating that mothers from households that received higher scores on a composite index of family adversity (e.g., low SES, single-parent status, high maternal neuroticism) scored higher on authoritarian parenting and lower on egalitarian parenting. Trained testers who independently (and blindly) evaluated the mother in the presence of the child rated those who scored high on the index of family adversity as more rejecting than mothers who scored low on the scale. Furthermore, Henry, Moffitt, Robins, Earls, and Silva (1993) found that mothers of children who developed antisocial disorder (according to the third edition of the *Diagnostic and Statistical Manual of Mental Disorders [DSM-III]*; American Psychiatric Association, 1980) by age 11 and who were showing high levels of problem behavior at ages 9 and 13 scored significantly higher on authoritarian parenting when the child was 3 years of age than did mothers of children who developed other *DSM-III* disorders or who did not have disorders. The internal consistency reliability of the six egalitarian-parenting subscales (i.e., three at each age) and of the six authoritarian-parenting subscales (i.e., three at each age) were .79 and .83, respectively.

Middle childhood. When children were 7 and 9 years of age, mothers were interviewed about the discipline practices they used on the day prior to the interview, about their own and their husband/partner's consistency in disciplining the child, and about their consistency as a couple in disciplining the child; mothers also completed the 3-subscale Family Relations Index of the Family Environment Scales (FES; Moos & Moos, 1981), a widely used self-report questionnaire that assesses the family atmosphere with 90 true-false items that form 10 subscales. The median Kuder-Richardson internal consistency for the scales was .75, with median 11-month and 12-month stabilities of .77 and .74, respectively (Moos & Moos, 1981). In the DMHDS sample, stability coefficients on all 3 subscales of the Family Relations Index were in excess of .50 between ages 7 and 9 (Parnicky, Williams, & Silva, 1985).

From these sets of measurements, two composites were generated for purposes of this inquiry, one reflecting family climate and the other reflecting negative discipline. *Family climate* was constructed by summing the Cohesion and Expressiveness subscales of the FES at ages 7 and 9 and subtracting from them the Conflict subscale scores at these two ages ($\alpha = .59$). Henry et al. (1993) and Williams, Anderson, McGee, and Silva (1990) found that this measure at ages 7 and 9 predicted antisocial disorder at ages 11 and 13.

The *negative discipline* composite was created by combining four scores obtained at 7 and 9 years of age ($\alpha = .61$): the mother's rating of (a) her consistency in disciplining the child (i.e., changeable vs. always the same), (b) her husband/partner's consistency in disciplining the child, (c) their consistency as a couple in disciplining the child, and (d) the number of negative discipline behaviors used on the day prior to the interviews of the 7- and 9-year-old children (the list included smacking the child with something, threatening to send the child away, shouting at the child, and yelling the child he or she was not loved). Henry et al. (1993) reported that negative and inconsistent discipline in middle childhood discriminated children with and without an antisocial disorder (according to criteria of the *DSM-III*).

Adolescence. Two sets of measurements obtained when children were 13 and/or 15 years of age were used to generate a measure of family climate and of the quality of the child's relationship with his or her parents. When children were 13 and 15 years of age, mothers again completed the three-subscale Family Relations Index of the FES. As before, these scales were composited to generate an index of family climate ($\alpha = .73$). In

addition, when children were 13 and 15 years old, they reported on their attachment to parents by using a 24-item shortened version of Armsden and Greenberg's (1987) 53-item Inventory of Parent and Peer Attachment, which assesses the extent to which adolescents feel that they have a relationship with their parents that is (a) trusting, (b) communicatively open, and (c) nonalienated. Nada Raja, McGee, and Stanton (1992) found that the brief version of the Attachment-to-Parents subscale was internally consistent ($\alpha = .78$) with the Dunedin sample and that children scoring low on the scale scored significantly worse on multiple measures of mental health, including anxiety, depression, inattention, and conduct problems. These findings replicate results from a smaller U.S. sample reported by Armsden and Greenberg.

Control Variables

In light of evidence showing that parental health, parental age, and child gender all affect intergenerational relations (e.g., Rossi & Rossi, 1990; Whitbeck et al., 1991), these variables/constructs were measured to serve as covariates in the hierarchical regression analyses. Young-adult children's own status as parents (yes vs. no) was also included as a covariate. To assess parental health, we asked each parent to complete the MOS 36-Item Short-Form Health Survey (McHorney, Ware, Lu, & Sherbourne, 1994; Mchorney, Ware, & Raczek, 1993; Ware & Sherbourne, 1992). The instrument is designed for use with young and old individuals, as well as with those who are sick and healthy. Evidence of reliability comes from work on 3,445 patients, which showed that all scales passed tests of item-internal consistency and item-discriminant validity (McHorney et al., 1994). Evidence of validity comes from work showing that the scales primarily measuring physical health best distinguish groups differing in the presence and severity of chronic medical conditions, whereas the scales primarily measuring mental health best distinguish groups differing in the presence and severity of psychiatric disorders (McHorney et al., 1993). For the purposes of this report, six items rated on 5-point scales were composited to create a general health index, as described in the scoring manual. One item required the respondent to rate his or her general health, and the other items addressed whether the respondent got sick more easily than other people, was as healthy as anybody she or he knew, was not in particularly good health and expected to get worse, or felt that his or her health was excellent. The internal consistency of this general-health composite was .84.

Results

Three primary sets of analyses are presented. The first concerns the intercorrelation of the measures of family environment (i.e., parenting, family climate, relationship quality) from the three developmental periods and the measures of intergenerational relations in young adulthood. The second concerns the multivariate prediction of intergenerational relations using the family-environment measures across all three developmental periods, after controlling for the covariates. The third concerns the cumulative effects of family environment across the three developmental periods.

Intercorrelation of Childhood Family-Environment Measures and Intergenerational Relations

The intercorrelation of the measures of family environment from the three developmental periods and the measures of intergenerational relations in young adulthood are presented in Table 3. Noteworthy is the fact that measures of the family environment in early childhood, middle childhood, and adolescence were significantly, though modestly, related to each other, suggesting some

Table 3
Correlations Among the Childhood Parenting, Family Climate, and Relationship Quality Variables and Parent-Child Relationship Quality in Adulthood

Variable	1	2	3	4	5	6	7	8
EC egalitarianism	—							
EC authoritarianism	-.16***	—						
MC family climate	.11***	-.11***	—					
MC negative discipline	-.03	.00	-.32***	—				
EA family climate	.14***	-.07*	.51***	-.33***	—			
EA parent-child RQ	.07*	-.07*	.15***	-.15***	.39***	—		
Affectional Solidarity ^a	.05/.02	-.05/.01	.10**/.04	-.12***/-.08*	.20***/.14***	.24***/.23***	—	
F-A Solidarity ^a	.05/.06	.02/.03	.03/.03	.01/.00	.05/.08*	.08*/.13***	.29***/.56***	—

Note. Decimal points are omitted. EC = early childhood; MC = middle childhood; EA = early adolescence; RQ = relationship quality; F-A = functional-associational.

Correlation between early childhood parenting, family climate, and relationship quality variables and mother-child/father-child relationship quality in adulthood (e.g., the correlation between early childhood egalitarianism and mother-child affectional solidarity was .05, and the correlation between early childhood egalitarianism and father-child affectional solidarity was .02).

p < .05. ** p < .01. *** p < .001.

ability in the child-rearing environment. Thus, when maternal child-rearing was more egalitarian and less authoritarian in early childhood, family climate was more positive in middle childhood and early adolescence, and parent-child relationship quality was more positive during early adolescence. Similarly, more positive family climate in middle childhood and less negative discipline during this period predicted more positive family climate in early adolescence and more positive parent-teen relationship quality. Although low levels of negative discipline in middle childhood predicted a more positive family environment in adolescence, early-childhood measures of maternal child-rearing practices did not predict negative discipline during middle childhood.

The pattern of correlations in the bottom two rows of Table 3 are consistent with a psychometric rather than an early-experience perspective in showing that associations between the antecedent family-environment measures and subsequent intergenerational relations decreased in magnitude as the time between predictor and outcome increased. Thus, measures of family climate during adolescence and parent-teen relationship quality proved to be stronger predictors of affectional and functional-associational solidarity in young adulthood than did middle-childhood measures of family climate and negative discipline. The latter proved to be better predictors of intergenerational relations in young adulthood than did the early-childhood measures of maternal child-rearing practices. Tests of the significance of differences between these correlations were not carried out because we did not want to imbue the differences with more meaning than they merit in light of the changing nature of the predictors across developmental periods.

Multivariate Prediction of Intergenerational Relations: Regression Analyses

We conducted hierarchical ordinary least squares regression analyses to determine whether the child-rearing measures, broadly conceived, in early childhood, middle childhood, and early adolescence predicted intergenerational relations in young adulthood after controlling for study member's parental status and gender and parent's age and health. Child-rearing predictors were entered chronologically, with measures reflecting earlier experiences (i.e.,

early childhood) entered before measures reflecting later experiences (i.e., middle childhood).¹ Analyses were conducted for each of the two dependent variables (Affectional and Functional-Associational Solidarity). Mother-child and father-child relationships were examined separately. No distinction was made between parent-son and parent-daughter relationships because additional analyses not reported here found no evidence that child gender moderated the predictive relations to be reported. In this subsection we first present the effects of control variables on the measures of intergenerational relations before moving on to consider the effects of predictors from each developmental period. Finally, we consider interactions between these latter predictors both within and across developmental periods before proceeding to the final stage of analysis, in which we examine the cumulative effects of all developmental periods.

The predictor variables were entered hierarchically as blocks. *F* change comparisons between successive blocks tested the significance of the variance accounted for by each additional block of variables. Model 1 tested whether control variables predicted intergenerational relations. Model 2 tested whether the early-childhood measures predicted intergenerational relationships above and beyond the control variables included in Model 1. Models 3 and 4 tested, respectively, whether middle-childhood and adolescent measures accounted for additional variance in young adults' relationships with their parents. Presentation is restricted to analyses of cases that had antecedent data from all three developmental periods. Although this attenuated the sample size somewhat, it had negligible effects on the results that are reported here. (Tables identical to those presented are available upon request for parallel analyses carried out with missing data imputed.)

Results of the hierarchical regression analyses are displayed in Table 4. The variance accounted for by each successive block is presented, and the asterisks indicate whether a particular block

¹ Additional analyses revealed that entering the parenting/family climate variables in reverse order did not affect the results. Regression tables reflecting reverse order of entry are available from Jay Belsky upon request.

Table 4
Predicting Parent-Child Intergenerational Relations From Measures of Parenting, Family Climate, and Relationship Quality in Childhood and Early Adolescence

Model and variable	Mother-child				Father-child			
	Affectional Solidarity		Functional-Associational Solidarity		Affectional Solidarity		Functional-Associational Solidarity	
	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β
Model 1: Control	.04***		.06***		.04***		.008	
Study member is a parent		-.13***		.09*		-.10**		.04
Parent's poor health		-.11**		.02		-.13***		-.05
Parent's age		.06		-.01		.06		.02
Sex (F = 0; M = 1)		-.10**		-.22***		-.09*		-.06
Model 2: Early childhood	.004		.004		.005		.005	
Egalitarianism		.06		.06		.04		.07
Authoritarianism		.05		.02		.06		.04
Model 3: Middle childhood	.015**		.003		.002		.003	
Family climate		.07		.06		.01		.05
Negative discipline		-.08*		.04		-.04		.04
Model 4: Early adolescence	.033***		.008*		.04***		.006	
Family climate		.09		-.01		.04		.02
Relationship quality		.15***		.09*		.19***		.08
Total R^2		.09***		.08***		.09***		.02

Note. Beta coefficients represent the magnitude of the effect at the step at which the variable was entered in the regression analysis. F = female; M = male.

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

added significantly to the overall variance accounted for in the regression analysis. The overall variance accounted for at the final step in the analysis is presented in the last row of the table. In all cases except father-child functional-associational solidarity, the final model accounted for a modest, but highly significant, amount of variance in intergenerational relations. In the case of mother-child relationships, the total model accounted for 9% of the variance in affectional solidarity, $F(10, 738) = 7.62, p < .001$, and 8% of the variance in functional-associational solidarity, $F(10, 738) = 6.21, p < .001$. In the case of father-child relationships, the total model accounted for 9% of the variance in affectional solidarity, $F(10, 687) = 6.35, p < .001$, and 2% of the variance in functional-associational solidarity, $F(10, 687) = 1.54, ns$. The standardized beta weights appear next to each predictor. These beta weights represent the magnitude of the effect of a given predictor at the step when it was entered in the regression analysis.

Effects of Control Variables on Intergenerational Relations

Study members who were parents themselves experienced less affectional solidarity with their parents but more functional-associational solidarity with their mothers. Study members also experienced less affectional solidarity with their parents when parental health was poor. Compared with sons, daughters experienced more affectional solidarity with their parents. Mothers and daughters experienced more functional-associational solidarity compared with mothers and sons.

Effects of Mother's Parenting During Early Childhood on Intergenerational Relations.

The cumulative effect (i.e., change in R^2) of maternal child-rearing practices in early childhood did not account for a significant amount of variance in mother-child or father-child relations in young adulthood.

Effects of Family Climate/Discipline in Middle Childhood on Intergenerational Relations

Parenting/family climate in middle childhood significantly accounted for additional variance in mother-child affectional solidarity in young adulthood. Mother-child relations were characterized by more affectional solidarity when there was little use of negative discipline in middle childhood. However, neither index of father-child relations in young adulthood could be predicted using middle-childhood measures of family climate or parental discipline.

Effects of Family Climate/Relationship Quality in Early Adolescence on Intergenerational Relations

Family climate during early adolescence and teen-reported parent-child relationship quality collectively predicted affectional solidarity in parent-child relations and functional-associational solidarity in mother-child relations in young adulthood. When teenage children reported that their relationships with their parents were characterized by trust, communication, and low alienation (i.e., positive relationship quality), mother-child relationships in

ing adulthood were characterized by more affectional and functional-associational solidarity, and father-child relations were characterized by more affectional solidarity.

Modeling Within- and Between-Period Interactive Effects

Given that family environment was not a powerful predictor of intergenerational relations in the multivariate analyses, additional analyses were undertaken to determine whether this general finding might have resulted from considering only the main effects of family environment in the original multivariate regression analysis. If the effects of negative features of the family environment were offset by the presence of positive features within the same developmental period, or if the enduring impact of one developmental period was dependent upon what transpired during a different one, a focus, respectively, upon within- and between-period interactions involving measures of the family environment might help to identify and illuminate such complex family processes. To this end, we undertook two additional sets of regression analyses.

In the first set of such analyses, interactions between family-environment measures within developmental periods were entered along with their main effects of these predictors. Of a total of 12 two-way interaction terms tested (i.e., 3 interactions × 2 parent-child relationships × 2 dependent variables), 2 proved to be statistically significant. During early childhood, the interaction between egalitarianism and authoritarianism proved significant in the prediction of functional-associational solidarity in the father-child relationship: $F_{\text{change}}(1, 690) = 4.64, p < .05$. During adolescence, parent-child relationship quality and family climate interacted in the prediction of mother-child affectional solidarity: $F_{\text{age}}(1, 735) = 4.41, p < .05$.

To illuminate the nature of these interactions, we adjusted the means for the dependent variables for the covariates and plotted the means as a function of high and low levels of the interacting factors (with high and low defined as above and below the mean, respectively). Inspection of Figure 1 reveals that when authoritarianism was high in early childhood rather than low, father-

child intergenerational relations were characterized by more functional-associational solidarity, but only when parenting was highly authoritarian as well. Inspection of Figure 2 shows that positive family climate enhanced the effect of positive parent-child relationship quality and that negative family climate enhanced the effect of negative parent-child relationship quality on mother-child affectional solidarity.

In order to test for interactions between developmental periods, we reduced the number of family-environment predictor variables by creating a single composite measure for each age period. In early childhood, this score was the difference between egalitarianism and authoritarianism; in middle childhood, the score was the difference between positive family climate and negative discipline; and in early adolescence, the score was the sum of parent-child relationship quality and positive family climate. With these composite measures in hand, we created three interaction terms (Early Childhood × Middle Childhood, Early Childhood × Early Adolescence, Middle Childhood × Early Adolescence) and entered them as a block in regression analyses. More specifically, after the main effects of the components of the interactions and covariates were entered, the set of interaction terms was entered. The effects of the interaction terms were thus tested in four separate equations, one for each of the two intergenerational-relations dependent variables for each parent-child relationship. Because only 1 of 12 individual interactions proved significant and the block of interaction terms never contributed significantly to explained variance over and above the covariates and main effects of the family environment, these analyses are not discussed further.

Cumulative Effects Analysis

A final set of analyses was carried out in hopes of further illuminating the cumulative effects of growing up in a family environment that appeared to be more rather than less supportive of intergenerational relations in young adulthood. Toward this end, we defined a supportive family environment in early childhood as one in which a family scored above the 50th percentile on egalitarianism and below the 50th percentile on authoritarianism. Sup-

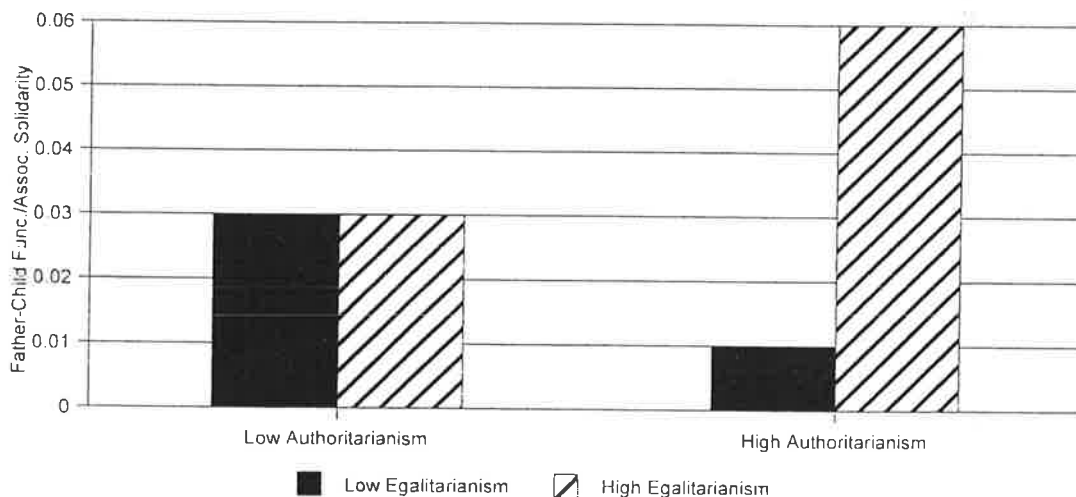


Figure 1. Adjusted mean father-child functional-associational (Func./Assoc.) solidarity as a function of low and high egalitarianism and authoritarianism in early childhood.

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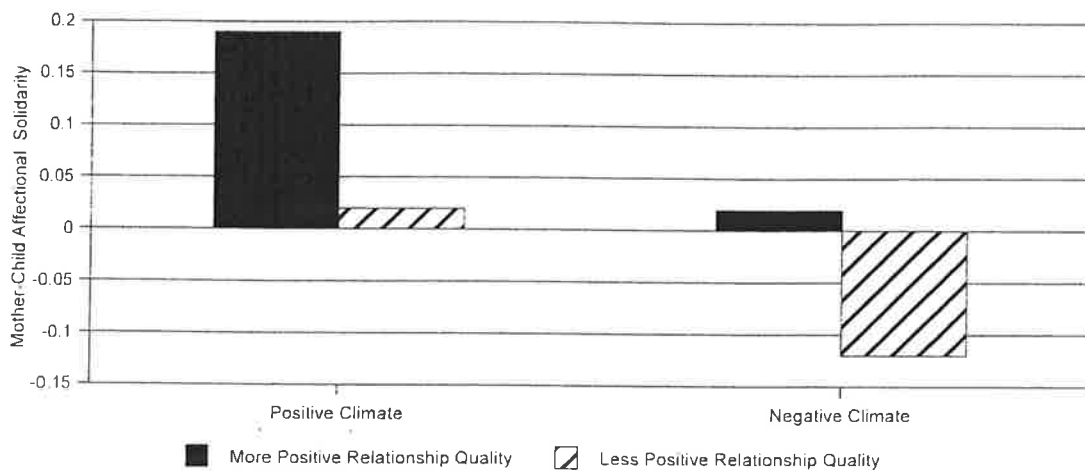


Figure 2. Adjusted mean mother-child affectional solidarity as a function of positive and negative family climate and more and less positive relationship quality in early adolescence.

itive parenting/family climate in middle childhood was defined having a score above the 50th percentile on family climate and low the 50th percentile on negative discipline. Finally, supportive parent-child relations/family climate in early adolescence was defined as having scores above the 50th percentile on both family climate and parent-child relationship quality. With these scores in mind, we classified families in terms of having experienced a positive family environment 0, 1, 2, or 3 times across the early-childhood, middle-childhood, and early-adolescence periods. This cumulative family-environment variable was entered in an analysis of covariance along with the control variables of parental age, health, study member sex, and study member parental status. Planned comparisons were conducted to determine whether the effect of experiencing positive parenting in zero to three developmental periods was linear when parental age and health and young-adult sex and parental status were controlled. Results revealed significant linear trends in the case of mother-child and father-child affectional solidarity and a significant cubic trend in the case of father-child functional-associational solidarity (see Table 5). In general, parent-child affectional solidarity increased with the number of periods in which study members had

experienced positive family environment. Because visual inspection of the adjusted means further suggested in the case of mother-child and father-child affectional solidarity that the effect of having two or three developmental periods that were positive in nature appeared different than having none or one, a follow-up comparison was conducted that, for mother-child affectional solidarity only, revealed this to be the case. Effects of exposure to two as opposed to three periods of a supportive family environment did not prove significantly different, however, even though consideration of relevant means raised this prospect.

Discussion

The purpose of this study was to advance understanding of the determinants of intergenerational relations by examining linkages between parenting, parent-child relationships, and family climate while growing up and parent-child relations during young adulthood. In this discussion, we first consider the strengths and limits of this work, and we then assess the evidence pertaining to the effects of the covariates on intergenerational relations before turning our attention to the primary focus of this inquiry—the effect of

Table 5

Table 5. Mean Scores and Standard Deviations, Adjusted for Covariates, on Measures of Intergenerational Relations as a Function of Cumulative Positive Family Environment

Variable	No. of developmental periods in which family environment was positive				F linear	df
	0 (n = 453)	1 (n = 331)	2 (n = 189)	3 (n = 50)		
Mother-child Affectional Solidarity	-.03 (.03)	-.01 (.04)	.14 (.05)	.27 (.10)	5.18***	3, 849
Mother-child F-A Solidarity	.03 (.02)	-.03 (.03)	.06 (.03)	.03 (.07)	ns	
Father-child Affectional Solidarity	.04 (.03)	-.02 (.04)	.15 (.05)	.23 (.10)	3.53*	3, 781
Father-child F-A Solidarity	.06 (.03)	-.05 (.03)	.10 (.04)	-.002 (.07)	ns	

ns. Numbers in parentheses (in the body of the table) are standard deviations. Parent-child Affectional Solidarity scores were created by standardizing and averaging parent-child closeness and conflict scores (as these were measured on different scales) and averaging them. Similarly, parent-child Functional-Associational (F-A) Solidarity scores were created by standardizing and averaging parent-child contact and reciprocal-assistance scores. * $p \leq .05$. *** $p \leq .001$.

family processes and relationships during early childhood, middle childhood, and adolescence on intergenerational relations in young adulthood.

Strengths and Limits of Study

Whereas most research examining developmental antecedents of intergenerational relations has relied upon retrospective reports obtained many years after childhood (e.g., Rossi & Rossi, 1990; Whitbeck et al., 1991) or has had available for analysis only data on parenting during the adolescent period (Aquilino, 1997; Thornon et al., 1995; Tubman & Lerner, 1994), investigation of the Dunedin longitudinal cohort afforded the opportunity to address issues of child-rearing history prospectively, using data gathered about children as young as 3 years of age. Also advantageous was the availability of data on parenting, parent-child relationships, and/or family climate for almost every other year of the child's life through age 15, as this made possible the creation of multiage composites reflective of distinct developmental periods. The fact that reports about the quality of contemporary parent-child relations were obtained from both the child and the parent when children were 26 years of age represents another strength of this inquiry, particularly in light of the fact that high levels of cooperation from mothers and fathers alike were achieved.

Despite these evident strengths, the research is not without limits. Most notably, unlike in retrospective studies, in this study we were restricted to measurements of family processes (i.e., parenting, family climate, parent-child relationships) within the longitudinal data archive. This raises the possibility that results of this investigation may have been stronger had measurements more central to contemporary theory and research been available, such as indices of attachment security and parent-child mutual positivity in early and middle childhood and of parental monitoring during adolescence. Another limitation of this work relates to the developmental history of the Dunedin project itself, in that virtually all measurements of family life were provided by mothers, even when they pertained to the entire family, as was the case with the assessments of family climate.

Concerns can also be raised about the assessments of dependent, intergenerational relations, constructs used in this investigation, especially as they were all self-reports, and only a limited period of time was devoted to securing them. Ultimately, the fact that parent and child reports of intergenerational relations loaded on the same factor in this study convinces us that whatever measurement limits we experienced, this alone does not explain the limited predictive power we detected when it came to linking family experiences with intergenerational relations in adulthood. More likely to account for the limited power to predict intergenerational relations is the prospective nature of this inquiry. Although some investigations of the family origins of intergenerational relations provide stronger evidence of linkages between past and present than the current research, these are typically studies that rely upon retrospective reports of family life obtained at the very same point in time as the assessments of intergenerational relations (Rossi & Rossi, 1990; Webster & Herzog, 1995; Whitbeck et al., 1991).

Effect of Covariates on Intergenerational Relations

With respect to the effects on intergenerational relations of the covariates included in this inquiry, results proved both consistent

and inconsistent with other findings in the literature. Recall that with the control variable of child sex, mother-daughter and father-daughter relations evinced greater closeness and less conflict (i.e., greater affectional solidarity) than intergenerational relations involving sons; mother and daughters also had more contact and more reciprocal assistance (i.e., greater functional-associational solidarity) than mothers and sons. Such findings are consistent with the view that daughters are more likely than sons to be "kin keepers" within families (Bromberg, 1983; Shanas, 1962; Treas & Bengston, 1988). However, we did not find that associations between child-rearing history and intergenerational relations were weaker for daughters than for sons (i.e., absence of sex moderation of prediction models), which we might have expected had the kin-keeping proclivity of daughters attenuated the effects of early family processes on parent-daughter relations in young adulthood. Thus, the developmental processes discussed below seem to be invariant across sons and daughters, at least when children are young adults in their mid-20s.

The findings regarding parental health appear somewhat at odds with other research, as poorer parental health in this inquiry predicted less affectional solidarity between young adults and both of their parents. Data from studies of much older parents indicate that ill health fosters contact and assistance between generations (Eggebeen, 1992; Ikkink, van Tilburg, & Knipscheer, 1999; Kaufman & Uhlenberg, 1998; Rossi & Rossi, 1990), though this contact can foster stress, either by virtue of the conflict it spawns between middle-aged "children" and their aged parents or as a result of role overload experienced by the younger generation that is often raising children at the same time as providing support for parents (Stoller & Pugliesi, 1989; Zarit & Eggebeen, 1995). Exactly why middle-aged parents' ill health should be predictive of less closeness and more conflict in intergenerational relations when children are young adults is not entirely clear. Perhaps because adults in their mid-20s can be highly self-focused, factors that pull them toward their parents, such as a parent's ill health, may be perceived as burdensome, thereby fostering less positive relations between generations.

With respect to the final control factor, we found that being a parent seemed to have a modest negative impact on intergenerational relations, as there was more conflict and less closeness in mother-child and father-child relationships (i.e., affectional solidarity) when the study member had a child of his or her own. This could be explained, in part, by the related finding that there was more contact and reciprocal assistance (i.e., functional-associational solidarity) between mother and daughter when young adults were parents themselves. Although the former findings are inconsistent with the view that intergenerational relations benefit when children assume roles similar to those of their parents (Aquilino, 1997; Bengston & Black, 1973; Cooney, 1997), they replicate results from American research (Aquilino, 1999; Kaufman & Uhlenberg, 1998). In so doing, they raise the prospect that disagreements over how best to raise the next generation—which may be especially likely to arise when contact between generations is frequent—could be the source of intergenerational tension when young-adult children are parents themselves.

Effects of Parenting/Parent-Child Relationships and Family Climate on Intergenerational Relations

It is likely that the central findings of this inquiry, namely, those concerning child-rearing history, are among the ones most consis-

tent with the literature. In the main, this study, like others (Aquilino, 1997; Rossi & Rossi, 1990; Thornton et al., 1995; Tubman & Lerner, 1994; Whitbeck et al., 1991), indicates that supportive parenting, positive family climate, and trusting parent-child relationships (as opposed to harsh, inconsistent discipline, conflictual, negative family climate, and alienated parent-child relationships) forecast less conflict and more contact, closeness, and reciprocal assistance between parents and their young-adult children, especially in the case of mother-child relationships.

Having made this observation, we would be remiss if we did not draw attention yet again to the magnitude of the empirical relations detected. In the main, they were modest at best, if not weak, accounting for only limited variation in intergenerational relations. What remains unclear is whether the limited predictive power of the early-childhood, middle-childhood, and even adolescent measures of parenting and family climate reflects limits in the predictors themselves or, instead, the dynamic nature of development over the life course. Perhaps the reason that prediction of parent-child relations in young adulthood may have proven so modest is that the mid-20s are a time in the life course when the legacy of relationships and interpersonal processes in the family of origin are not particularly pronounced, at least with respect to intergenerational relations. As this is a period in the life course during which "children" are still exploring adult roles, as well as initiating occupational careers and forging close, intimate relationships with age-mates, it may simply be a time when parent-child relationships are not at the forefront of young-adult lives. As a result, legacies of the past may not emerge to shape intergenerational relations during this developmental period. This may also turn out to be the case because the life courses of many parents are themselves changing. Certainly, some long-standing marriages dissolve when parents confront the empty nest, and in other families tensions that may have derived from economic pressures on parents to provide financial support for a household with children tend to subside. Thus, it seems possible that some parents who were sensitive to and supportive of their children and adolescents turn to focus more upon themselves, whereas others who may not have been particularly available or caring in earlier times may become more so. Both phenomena could easily generate discontinuities between family relationships in childhood and adolescence and in young adulthood, resulting in the modest relations detected in this inquiry between family relationships in childhood and adolescence and intergenerational relations in young adulthood.

Furthermore, it may be that past becomes prologue in the case of intergenerational relations principally when intergenerational relations are severely challenged—for example, when aging parents need help and assistance. When the young-adult children and their mostly middle-aged parents in the New Zealand study are older, this hypothesis can be tested empirically. Because gerontological investigators have not paid sufficient attention to developmental history in the study of intergenerational relations among aged parents, and because the parents in the current study are only middle-aged, it is not possible to choose between the alternatives considered when trying to account for the limited prediction of intergenerational relations discerned in this study. Obviously, only future research can further illuminate the issues raised.

Despite the modest effects discerned in the current study, what is new and perhaps important about the results are that they reflect

prospective developmental processes that extend back at least into middle childhood. Although early-childhood predictors, as main effects, failed to forecast intergenerational relations, recall that family-environment assessments from middle childhood and early adolescence did predict intergenerational relations, especially in the case of mother-child relationships. More specifically, harsh and inconsistent discipline during the middle-childhood years forecast less mother-child affectional solidarity, as did poorer parent-child relationship quality in adolescence. The latter also forecast less contact and reciprocal assistance between mothers and their young-adult children. Only in the case of parent-child relationship quality during adolescence could father-child intergenerational relations be predicted. Recall that when relationships between parents and children were better during early adolescence, greater closeness and less conflict was evident between fathers and their young-adult children. In the main, these results accord nicely with a variety of developmental and theoretical perspectives suggesting that intergenerational relations should be influenced by the quality of these relationships when offspring were young and, more specifically, that positive, supportive relations in adulthood have their origins in harmonious relations in childhood, whereas problematic relations in adulthood have their origins in discordant relations in childhood (Caspi & Elder, 1988; Sroufe & Fleeson, 1986).

The current research may be most novel in examining distinct developmental periods. The fact that the power of predictors was greater—however limited—when measured at later periods of development than at earlier ones is consistent with the psychometric principle that the magnitude of the association between two variables increases as the time between their measurement decreases. Although the data do not support developmental perspectives that emphasize early experiences over later ones, strong inferences cannot be drawn about the relative importance of distinct developmental periods because measurements were not constant over time.

This is not to say that even the earliest measured experiences—namely, those occurring during the early-childhood years—proved totally insignificant. Recall that in the analyses of within-period interactions between indices of the family environment, one of the two significant interactions showed that the combination of high egalitarian and high authoritarian parenting was related to high levels of father-child contact and reciprocal assistance (i.e., functional-associational solidarity) in young adulthood (see Figure 1). Although such a finding was certainly not predicted, it does suggest that it was not entirely the case that the family environment in early childhood proved unrelated to intergenerational relations in young adulthood. Nevertheless, we remain at a loss when it comes to explaining this first interaction, as we certainly never anticipated that scoring high on a measure that was considered to positively predict intergenerational relations (i.e., egalitarianism) and high on one expected to negatively predict parent-child relations in young adulthood (i.e., authoritarianism) would forecast intergenerational relations between fathers and their children that were marked by particularly high levels of contact and reciprocal assistance. Were the early-childhood predictors based upon paternal reports of their parenting attitudes and values rather than maternal reports, we might surmise that high levels of both kinds of parenting function, over time, as indicators of paternal investment, thus laying the groundwork for marked functional-associational solidarity in the father-child relationship in young

adulthood. But as this was not the case, it might be best to wait for this unanticipated result to be replicated before breathing too much meaning into it.

The second significant interaction was certainly more consistent with expectations, in that it revealed that double doses of supportive and unsupportive family experiences had more than just additive effects. Recall that when positive family climate and positive parent-child relationship quality co-occurred, mother-child affectional solidarity was disproportionately high; when both of these predictors highlighted unsupportive family environments, mother-child affectional solidarity was disproportionately low (see Figure 2).

Such seemingly interactive effects of features of the family environment also emerged in the cumulative analysis. Even though between-period interactions failed to make a significant contribution to the prediction of intergenerational relations, the cumulative analysis showed that when more than one developmental period under investigation could be characterized as supportive of relationship development, then affectional solidarity was relatively high in the case of both mother-child and father-child intergenerational relations. These cumulative analysis findings, along with the second interactional finding mentioned above, suggest that certain aspects of intergenerational relations are prone to the operation of risk- and protective-factor processes. After all, exposure to a seemingly unsupportive rearing environment during only one developmental period can be compensated for by experiences in other developmental periods when it comes to forecasting conflict and closeness in parent-child relationships in young adulthood (i.e., the protective-factor process). The same did not appear to be the case, however, when unsupportive family environments characterized more than one developmental period (i.e., the risk-factor process). Recall in this regard that there was no difference in parent-child affectional solidarity when either two or three developmental periods could be characterized as relatively unsupportive.

Also interesting is that this apparent risk- and protective-factor process emerged only in the case of affectional solidarity and not in the case of functional-associational solidarity. Even though this differential finding was not anticipated, it suggests that different aspects of parent-child relations in young adulthood have somewhat different developmental roots or are at least a function of somewhat different developmental processes. Whereas contact and assistance seem to reflect the simple additive nature of prior family history, closeness and conflict seem to reflect a more dynamic process whereby the impact of what transpires at one developmental period is partially contingent upon what happens at other developmental periods. Perhaps more than anything else, what this finding indicates is that it may be misguided to treat relationships in all-too-general terms. By at least distinguishing between two central features of parent-child relationships in young adulthood, we were in a position to detect nonidentical developmental processes at work.

In sum, the data from this investigation indicated that more positive and less negative family processes during early childhood, middle childhood, and/or adolescence lay the foundations for less conflict and more contact, closeness, and reciprocal assistance between parents and their young-adult children, most notably between mothers and their children. In the main, these findings are consistent with retrospective studies of the determinants of inter-

generational relations (e.g., Rossi & Rossi, 1990; Whitbeck et al., 1991) as well as with the few prospective studies initiated in adolescence (Aquilino, 1997; Thornton et al., 1995; Tubman & Lerner, 1994). What remains to be seen is whether these predictive relations strengthen or weaken over time.

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