Sibling Relationships in Early Adulthood

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The purposes of this study were to describe the nature of sibling relationships in young adulthood and to examine correlates of individual differences in adults' sibling relationships. A new measure, the Adult Sibling Relationship Questionnaire (ASRQ; R. P. Lanthier & C. Stocker, 1992), was developed with 2 samples ($N = 383$). The factor structure of the ASRQ indicated that sibling relationships in early adulthood were characterized by 3 independent dimensions: warmth, conflict, and rivalry. Individual differences in adults' warmth, conflict, and rivalry with siblings were somewhat associated with family structure variables and were linked to the amount of contact between siblings and to siblings' mental health.

In the United States, 85% of adults have at least one sibling (Cicirelli, 1982). These relationships are typically the longest lasting ones in people's lives. In childhood, individual differences in the quality of sibling relationships are linked to children's social, moral, and cognitive development, as well as to their mental health (Dunn, 1983; Furman & Buhrmester, 1985; Stocker, 1993). Given the prevalence of sibling relationships and their importance in childhood, it seems important to examine the nature of sibling relationships in adulthood. Most of the previous research on adult siblings has focused on the elderly (see Bedford, 1989b). In the current study, we examined sibling relationships in early adulthood. Specifically, we report on the development of a new measure of adult sibling relationships and then examine correlates of individual differences in adults' sibling relationships.

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Dimensions of Adult Sibling Relationships

The first goal of this study was to identify characteristics of sibling relationships on which adults vary. In studies of children, investigators have consistently found a positive dimension that has been labeled warmth or affection (Brody, Stoneman, & Burke, 1987; Furman & Buhrmester, 1985; Stocker, Dunn, & Plomin, 1989; Stocker & McHale, 1992). In early adulthood, siblings are also likely to vary in the affectionate features of their relationships. Some, but not all, siblings may provide support and affection for each other as they move through normative developmental transitions such as getting married, raising a family, developing a career, and, in some cases, caring for aging parents. In middle and late adulthood, siblings report feeling close and accepting of each other (Bedford, 1989a; Cicirelli, 1982; Gold, 1989b; Seltzer, 1989).

In addition to positive features, children's sibling relationships are characterized by conflict and by rivalry for parental attention and affection (Dunn, 1983; Furman & Buhrmester, 1985; Stocker & McHale, 1992). It is not clear whether conflict and rivalry are also characteristic of sibling relationships in adulthood. On one hand, given the strength of family bonds, conflict and concerns about parental favoritism may persist into adulthood. On the other hand,

the conflict dimension of sibling relationships may be less pronounced in adulthood than in childhood because adult siblings choose how much contact they have with each other. Accordingly, adult siblings generally who do not get along well may simply choose to maintain little contact with each other. Similarly, issues of rivalry may be less salient in adulthood than in childhood because adult siblings typically no longer live with each other or with their parents. Research findings on the negative features of sibling relationships in adulthood have been mixed. In a study of middle-aged adults (Cicirelli, 1982), 88% of the participants reported rarely or never arguing with their sibling, and 93% reported rarely or never feeling competitive with their sibling. Similarly, in interviews of elderly siblings, only 10% of the sample fit a hostile typology (Gold, 1989b). In contrast to these results from self-reports, findings from individuals participating in small-group discussions showed that 45% of a sample of 22- to 93-year-olds reported feeling rivalry toward their sibling (Ross & Milgram, 1982).

Another relationship dimension that has appeared in some studies of children's sibling relationships is relative status–power (Furman & Buhrmester, 1985). This dimension refers to the extent to which one sibling has more power or status than the other sibling. In childhood, power is strongly associated with the relative age of the sibling; the older sibling typically has more power. It is unclear whether this is also a salient dimension in adult sibling relationships. Adult siblings are more similar to each other in cognitive and social development than are child siblings, and therefore age or other factors may be less likely to lead to differences in power among adult siblings than among child siblings. Alternatively, differences in power and status established in childhood may persist into adulthood.

In sum, previous research suggests that warmth is likely to be present, but it is less clear whether other dimensions such as rivalry and conflict are characteristic of sibling relationships in adulthood. Prior research on adult siblings has relied on open-ended and structured interviews, as well as other more qualitative methods, and has provided little psychometric information about these measures (e.g., Bedford, 1989a; Cicirelli, 1982; Gold, 1989a; Ross & Milgram, 1982). Although these techniques

provide a wealth of information, we chose to develop a self-report questionnaire because such measures have both psychometric and pragmatic appeal. Our aim was to develop a self-report measure that was valid and reliable and that could be completed quickly in group settings. We developed a measure specific to adult sibling relationships because these relationships differ from other close adult relationships. Some relationship qualities, such as rivalry for parental affection and attention, are unique to sibling relationships. Furthermore, when relationship dimensions are similar in sibling and other relationships, the manifestations of these dimensions are likely to differ. For example, affection in sibling relationships is expressed differently than affection in romantic relationships.

The Adult Sibling Relationship Questionnaire (ASRQ) focuses on adults' perceptions of sibling relationships because the psychological meaning of a relationship and the felt support or conflict provided by that relationship reside internally (Olson, 1977). These perceptions are likely to guide and influence patterns of interaction. Moreover, in the case of adults, perceptions may be particularly important, because most sibling relationships are maintained in the absence of daily interaction (Bedford, 1989a; Leigh, 1982).

Correlates of Individual Differences in Adult Sibling Relationships

After development of the ASRQ and examination of its psychometric properties, the second goal of the present study was to examine factors associated with individual differences in young adults' sibling relationships. A range of variables have been investigated as correlates of individual differences in children's sibling relationships, including family constellation variables and children's adjustment (Brody et al., 1987; Furman & Buhrmester, 1985; McHale & Gamble, 1989; Stocker et al., 1989; Stocker & McHale, 1992). The literature on family constellation variables, such as gender composition and age spacing, has produced mixed results in studies of children's and adolescents' relationships (see Teti, 1992, for a review). For example, some investigators have reported that siblings of the same gender are closer than siblings of different genders (Bowerman & Dobash,

1974; Furman & Buhrmester, 1985), whereas others have reported the opposite findings or no effects (Abramovitch, Pepler, & Corter, 1982; Minnett, Vandell, & Santrock, 1983; Teti & Ablard, 1989). Moderate relations have been found between closeness in age spacing and sibling conflict in middle childhood (Furman & Buhrmester, 1985). Finally, sisters have been shown to have closer relationships than brothers in middle age and old age (Cicirelli, 1982).

In addition to family constellation variables, other factors may be associated with individual differences in adult sibling relationships. Two of these factors are the amount of contact between siblings and siblings' psychological adjustment.

One might expect that siblings who have more affectionate and less conflictual relationships would maintain closer contact with each other than siblings who do not enjoy each other's company. Alternatively, some siblings may feel obligated to maintain contact with each other despite high levels of conflict or rivalry in their relationships. In one study that examined this issue, the amount of contact between adult siblings was associated with closeness in their relationships (Lee, Mancini, & Maxwell, 1987). Although geographic proximity may be related to how much contact adults have, adults who live near each other can choose not to communicate, and adult siblings who live far apart can maintain contact through the mail and over the telephone. Proximity, then, does not guarantee contact. In the current study, the amount of contact between siblings, but not their geographic proximity, was expected to be associated with the quality of sibling relationships.

Adults' mental health or psychological functioning was expected to be associated with variations in their sibling relationships. In particular, adults with healthy psychological functioning and high self-esteem were hypothesized to have warmer sibling relationships, and those with poor psychological functioning and lower self-esteem were expected to have more conflictual and rivalrous relationships with their siblings. These predictions were based on several factors. First, the quality of sibling relationships in childhood has been associated with self-esteem, depression, anxiety, and behavior problems (McHale & Gamble, 1989; Stocker, 1993). Second, if adults are experiencing difficulty in psychological functioning, they may either perceive their relationships to be more

negative than others or be unable to maintain positive sibling relationships. Finally, conflictual or rivalrous sibling relationships could lead to feelings of low self-esteem, depression, or anxiety in adults.

In summary, this study had two goals. The first was to develop a psychometrically sound self-report questionnaire to assess sibling relationship qualities in adulthood. The second goal was to examine associations between characteristics of adult sibling relationships and family constellation variables, contact between siblings, and siblings' mental health and self-esteem.

Method

Sample

Data were collected from two samples of young adults, one in Colorado and one in Indiana. Participants were volunteers from undergraduate classes. In the Colorado sample, students participated in the study to earn extra credit. In the Indiana sample, students had a course requirement to participate in a research study. The current study was one of several studies students could select. Students reported about a full biological sibling who was at least 17 years old. In cases in which participants had more than one sibling who was 17 years old, half of the participants were randomly assigned to report on the sibling they got along with best and half were asked to report on the sibling they got along with worst.

The Colorado participants were 148 undergraduate students (40 men and 108 women). Twenty-three of the male students reported about their relationships with brothers, and 17 reported about their relationships with sisters. Fifty-three female students reported about their relationships with sisters, and 55 reported about their relationships with brothers. Seventy-six percent of the participants reported about a relationship with an older sibling, and 24% described a relationship with a younger sibling. More students reported on their relationship with an older sibling than with a younger sibling because siblings were limited to those 17 years of age or older. The average age of participants was 20.60 years ($SD = 2.15$), and the average age of siblings was 23.00 years ($SD = 3.79$). The average age difference between siblings was 3.47 years ($SD = 2.34$). The average number of children in the participants' families was 3.21 ($SD = 1.49$).

The Indiana sample included 235 undergraduate students (88 men and 147 women). Forty-nine of the male students reported about their relationships with brothers, and 39 reported about sisters. Seventy-two of the female students reported about relationships

with sisters, and 75 reported about relationships with brothers. Because younger siblings had to be at least 17 years old, 89% of the students reported on their relationship with an older sibling, and 11% rated their relationship with a younger sibling. The mean age of participants was 19.30 years (SD = 1.46), and the average age of siblings was 22.40 years (SD = 2.61). The average age difference between siblings was 3.63 years (SD = 2.19). The average number of children in the participants' families was 3.03 (SD = 1.31).

The two samples were very similar in ethnicity and income. The majority of participants were Caucasian (81% in the Colorado sample and 89% in the Indiana sample). Students in both samples reported family incomes in the middle-class to upper-middle-class range.

Procedure

Questionnaires were administered to participants in small groups, and participants received course credit for taking part in the study. A subsample of 62 participants in the Colorado sample completed the questionnaire 2 weeks later so that data for test–retest reliability could be collected. Data were also collected from 118 siblings of participants in the Indiana sample. Students provided the researchers with the addresses of their siblings, and questionnaires were mailed to the siblings. Siblings who returned the questionnaires had their names entered in a lottery to win $50.

Measures

ASRQ. The ASRQ assesses respondents' perceptions of their own behavior and feelings toward their sibling, as well as their perceptions of their sibling's behavior and feelings toward them. The questionnaire includes 81 items conceptually grouped into 14 scales: Intimacy, Affection, Knowledge, Acceptance, Similarity, Admiration, Emotional Support, Instrumental Support, Dominance, Competition, Antagonism, Quarrelling, Maternal Rivalry, and Paternal Rivalry. The ASRQ items are included in the Appendix.

For all ASRQ items (except rivalry items), participants rate how characteristic each item is of themselves and of their sibling using Likert scales ranging from *hardly at all* (1) to *extremely much* (5). Maternal and paternal rivalry items (Items 11, 12, 23, 24, 38, 39, 50, 51, 65, 66, 77, and 78) are rated on 5-point Likert scales (1 = participant is usually favored, 2 = participant is sometimes favored, 3 = neither participant nor sibling is favored, 4 = sibling is sometimes favored, 5 = sibling is usually favored). These items were recoded as absolute discrepancy scores (0 = neither child is favored, 1 = parents sometimes favor

one child over the other, 2 = parents usually favor one child over the other.[1] Factor analyses and psychometric properties of the ASRQ are presented in the Results section; the following section describes how the measure was developed.

ASRQ development. ASRQ items were developed on the basis of a conceptual analysis of previous research on sibling relationships in adulthood and childhood (Bedford, 1989a; Brody et al., 1987; Cicirelli, 1982; Furman & Buhrmester, 1985; Stocker et al., 1989; Stocker & McHale, 1992). The initial pool of items was based on key relationship dimensions that prior investigators had described. We were particularly interested in developing an adult extension of the Sibling Relationship Questionnaire (Furman & Buhrmester, 1985). The Sibling Relationship Questionnaire has excellent psychometric properties and has been used successfully in numerous studies of children and adolescents (Begun, 1989; Brody, Stoneman, & McCoy, 1992; Buhrmester & Furman, 1990; Stoneman & Brody, 1993). A sample of 30 young adults completed a 100-item pilot version of the ASRQ and provided open-ended descriptions of their sibling relationships. On the basis of psychometric analyses, participants' descriptions of their sibling relationships, and verbal feedback from participants, a number of changes were made in the questionnaire. The original ASRQ included separate scales for the participant's reports about his or her behavior toward the sibling and for the participant's reports about his or her sibling's behavior. Because these ratings were very highly correlated, the scales were combined to create the 14 dyadic relationship scales described previously. In addition, items that were redundant or hard to understand were deleted or changed. The final version of the ASRQ includes 81 items.

Social desirability. As a means of assessing socially desirable responding, participants completed the Impression Management scale from the Balanced Inventory of Desirable Responding (Paulhus, 1991). Participants use a 7-point Likert scale ranging from *not true* (1) to *very true* (7) to rate 20 items about whether they present themselves in an overly positive light. The Balanced Inventory of Desirable Responding has demonstrated strong psychometric properties (Paulhus, 1991). In the current study, the Impression Management scale had an alpha of .75.

Contact and geographic proximity between siblings. Participants used 5-point Likert scales to rate how often they saw their sibling, got together with their sibling on special occasions, telephoned their sibling, and were telephoned by their sibling. These

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[1] Wording of ASRQ response alternatives varies slightly for different items. A complete version of the ASRQ and scoring instructions can be obtained from Richard P. Lanthier, College of Education, Texas Tech University, Box 41071, Lubbock, Texas 79409.

items formed an internally consistent scale ($\alpha = .78$) that showed high test–retest reliability over a 2-week period ($r = .85$). The ratings on these four items were averaged to create the contact measure. Siblings' geographic proximity was assessed by asking participants to indicate how many miles they lived from their sibling (1 = *same city*; 2 = *different city, less than 100 miles*; 3 = *more than 200 miles*; 4 = *more than 500 miles*; 5 = *more than 1,000 miles*).

Mental health. Psychological functioning was measured by the Brief Symptom Inventory (Derogatis & Melisaratos, 1983) in the Colorado sample. This inventory yields a total score that assesses overall mental health. The internal consistency alpha for the scale in the current sample was .96. Derogatis and Melisaratos (1983) also reported high test–retest reliability and convergent validity with scales from the Minnesota Multiphasic Personality Inventory (Hathaway & McKinley, 1951).

Self-esteem. Students in the Indiana sample completed the Global Self-Worth scale from the Self-Perception Profile for College Students (Neeman & Harter, 1986). This scale includes six items that are averaged to assess individuals' perceptions of their overall self-worth. Questions are written in a structured alternative format, individuals first decide which of two descriptions fits for them, and then they rate the description as "sort of true" or "really true." A sample item is "Some people like the kind of person they are but other people wish they were different." The scale was internally consistent in the current sample ($\alpha = .84$). Items on the original measure use the word *student* (e.g., "Some students like the kind of person they are"). In the current

study, the word *person* was substituted for *student* so that nonstudents could complete the questionnaire.

Results

First, psychometric and descriptive information on the ASRQ is presented. Second, results from correlational analyses of associations among characteristics of sibling relationships, family structure variables, contact, mental health, and self-esteem are reported. Results are presented for the Colorado and Indiana sample combined because the two samples had very similar backgrounds and demographic characteristics.

ASRQ Psychometric and Descriptive Information

Descriptive statistics, internal consistency estimates, 2-week test–retest reliabilities, and correlations between the scale scores and the social desirability measure for each of the ASRQ scales are provided in Table 1. High levels of internal consistency were observed for all of the scales, and there was adequate variability in the ratings on each of the scales. Two of the 14 scales (Competition and Dominance) were significantly correlated with social desirability, although the magnitude of these correlations was

Table 1

Descriptive Statistics and Psychometric Properties of Adult Sibling Relationship Questionnaire (ASRQ) Scales

ASRQ scale	M	SD	α	Retest r	Social desirability r
Acceptance	3.73	0.76	.88	.84**	.04
Admiration	3.65	0.72	.83	.87**	.09
Affection	3.51	0.95	.92	.93**	.04
Antagonism	2.11	0.84	.90	.78**	−.07
Competition	2.19	0.93	.85	.88**	−.21**
Dominance	2.07	0.72	.74	.75**	−.14*
Emotional Support	3.22	0.96	.90	.90**	.05
Intimacy	3.05	0.92	.91	.92**	.05
Instrumental Support	2.66	0.82	.76	.86**	.01
Knowledge	3.35	0.81	.88	.89**	.10
Maternal Rivalry	0.72	0.59	.85	.85**	−.04
Paternal Rivalry	0.66	0.64	.89	.79**	.01
Quarrelling	2.45	0.82	.86	.84**	−.11
Similarity	3.01	0.86	.83	.83**	−.01

Note. With the exception of Maternal Rivalry and Paternal Rivalry, scale scores range from 1–5; higher scores indicate more of a given dimension. Maternal Rivalry and Paternal Rivalry scores range from 0–2; higher scores indicate greater rivalry. $N = 383$ except for retest r and social desirability r ($ns = 62$ and 304, respectively).
* $p < .05$. ** $p < .01$.

low (mean $r = -.17$). Finally, participants' scores were stable across the 2-week period, as evidenced by the high and statistically reliable test–retest correlations.

To investigate the underlying structure of the ASRQ scales, we conducted a principal-components analysis with oblique rotation on data from the combined samples. Before analysis, all scale scores were transformed to z scores. A three-factor solution was selected because (a) three eigenvalues were greater than one, (b) the scree plot was most consistent with a three-factor solution, and (c) this solution was the most conceptually meaningful. The three factors accounted for 70% of the variance. Factor analysis was also completed on the Colorado and Indiana samples separately, and results were essentially identical in the two independent samples.

Results from the factor analysis are shown in Table 2. The first factor was labeled Warmth because it included intimacy, admiration, affection, acceptance, similarity, knowledge of the sibling, and support scales. The second factor was labeled Conflict because quarrelling, dominance, antagonism, and competition loaded highly on it. Finally, maternal and paternal rivalry loaded on the third factor, which was labeled Rivalry. This factor assesses the extent to which participants feel that their parents treat them and their sibling fairly or favor one sibling

over the other. Composite factor scores were formed by unit weighting each item from each of the subscales. Factor scores were minimally correlated: Warmth and Conflict, $r = -.19$; Warmth and Rivalry, $r = -.17$; and Conflict and Rivalry, $r = .23$ (all $ps < .05$).

A relative power–status dimension did not emerge from the factor analysis. Because this could have reflected the fact that the items about participants and siblings were combined, a second factor analysis using the separate scales for participants' reports about their own behavior and their reports about their siblings' behavior was conducted. An independent relative power-status factor did not emerge from this analysis.

Psychometric properties and descriptive data for the factor scores are summarized in Table 3. As was the case for the scale scores, the factor scores had adequate variability and high levels of internal consistency. Factor scores were very stable across the 2-week test–retest period (test–retest results were available only in the Colorado sample). The Warmth and Rivalry factor scores were not significantly correlated with the social desirability measure, but the Conflict factor score was; however, the magnitude of this correlation was small ($r = -.16, p < .05$).

Convergent validity was demonstrated by correlating participants' reports with the reports of the 118 siblings who completed the ASRQ. There was substantial agreement between the

Table 2

*Oblique-Rotated Factor Pattern Matrix From Principal-Components
Analysis of Adult Sibling Relationship Questionnaire (ASRQ) Scales*

	Factor			
ASRQ scale	Warmth	Conflict	Rivalry	h^2
Intimacy	.92			.83
Emotional Support	.90			.80
Affection	.89			.80
Knowledge	.87			.75
Instrumental Support	.72	.29		.56
Similarity	.71	−.17		.57
Admiration	.71			.57
Acceptance	.64	−.43		.67
Quarrelling		.90		.82
Antagonism		.87		.81
Dominance		.86		.75
Competition		.65		.42
Paternal Rivalry			.86	.72
Maternal Rivalry			.83	.71
% of variance	41	21	9	

Note. Shown are reordered oblique-rotated principal-components ($N = 383$). Loadings below |.25| are not shown for clarity.

Table 3
Descriptive Statistics and Psychometric Properties of Adult Sibling Relationship Questionnaire (ASRQ) Factors

ASRQ factor	M	SD	α	Retest r	Social desirability r
Warmth	3.28	0.69	.97	.95**	.06
Conflict	2.19	0.69	.93	.89**	−.16**
Rivalry	0.70	0.52	.88	.87**	.02

Note. Warmth and Conflict scores range from 1–5; higher scores indicate higher levels of the factor. Rivalry scores range from 0–2; higher scores indicate greater rivalry. N = 383 except for retest r and social desirability r (ns = 79 and 304, respectively).
** p < .01.

two siblings' perceptions of their relationship. Correlations between siblings were .60 for Warmth, .54 for Conflict, and .33 for Rivalry (all ps < .01). Together, these convergent correlations averaged .49. Discriminant validity was assessed by examining the cross-rater correlations of different factors. The average of the six discriminant correlations was .14, suggesting considerable discriminant validity among the factors.

Correlates of Individual Differences in Adult Sibling Relationships

Several significant associations occurred between family structure variables and sibling relationship characteristics (see Table 4). Large age differences between siblings were associated with less conflictual sibling relationships. Siblings of different genders reported less conflict in their relationships than siblings of the same gender. Female participants reported more rivalry in their sibling relationships than male participants. Participants who had female siblings, however, reported warmer and more conflictual relationships than those who had male siblings. Finally, the number of children in a family was negatively correlated with warmth and positively associated with rivalry.

Table 4 also shows the correlations of the sibling relationship dimensions with contact, geographic distance, mental health, and self-esteem (mental health scores were available only in the Colorado sample, and self-esteem scores were available only in the Indiana sample). The amount of contact siblings had with each other was positively associated with warmth in the sibling relationship and negatively related to rivalry. Contact and geographic

distance were significantly correlated (r = −.30, p < .05), meaning that siblings had less contact with each other if they lived further apart. Despite this significant correlation, no significant relations were found between the geographic distance between siblings and the characteristics of their relationships. Supplementary analyses also revealed no differences in relationship quality between siblings living in the same city and those who did not. Finally, participants' mental health was negatively correlated with sibling conflict. Participants who had high scores on psychological functioning reported less conflict in their relationships than those with low scores.

Table 4
Correlations Among Adult Sibling Relationship Questionnaire (ASRQ) Dimensions and Family Structure Variables, Contact, Geographic Distance, Mental Health, and Self-Esteem

	ASRQ factor		
Variable	Warmth	Conflict	Rivalry
Age difference	−.01	−.23**	.04
Gender difference	−.07	−.16**	.05
Gender	.09	−.09	.11*
Sibling gender	.12*	.11*	.04
Number of children	−.10*	−.10	.11*
Contact	.67**	.02	−.11*
Distance	.07	−.02	.04
Mental health	−.02	−.20**	.11
Self-esteem	.11	−.09	.00

Note. Mental health data were obtained from Colorado participants only (n = 148). Self-esteem data were obtained from Indiana participants only (n = 238). Gender was coded as 1 = male, 2 = female; gender difference was coded as 1 = same gender, 2 = opposite gender.
* p < .05. ** p < .01.

Discussion

ASRQ Psychometric and Descriptive Information

Sibling relationships in adulthood were characterized by three dimensions: warmth, conflict, and rivalry. These three dimensions, which are similar to those found in childhood and adolescence (Buhrmester & Furman, 1990; Furman & Buhrmester, 1985; Stocker et al., 1989; Stocker & McHale, 1992), may be characteristic of sibling relationships throughout much of the life span. In fact, a warmth or affection dimension has been observed in past work on middle-aged and elderly adult siblings (Bedford, 1989a; Cicirelli, 1982; Gold, 1989b; Seltzer, 1989).

Whereas one might intuitively expect warmth to be a salient dimension of adult sibling relationships, it is not as apparent that conflict and rivalry would be important relationship dimensions. After all, adult siblings generally live apart from one another and can determine how much contact they have with each other. Conflict could be avoided by disengagement and distance. Although some siblings may use an avoidant strategy, the present findings indicate that some pairs of siblings continued to have periodic conflicts or at least perceived that they did. Similarly, as found in some previous studies (Bedford, 1989a; Gold, 1989b; Ross & Milgram, 1982), siblings reported feelings of rivalry and concern over parental attention, even though few continued to reside with their parents.

Perceptions of conflict and rivalry were minimally related to perceptions of warmth. This finding is consistent with past work on children's relationships (Dunn, 1983; Furman & Buhrmester, 1985; Stocker et al., 1989) and may reflect the ambivalent feelings many individuals have toward siblings. Adult siblings can have feelings of warmth as well as conflict or rivalry toward their sibling. These positive and negative perceptions are not opposite ends of a unitary dimension. Although perceptions of rivalry and conflict were statistically related, the strength of these associations was quite modest ($r = .23$). This relation is smaller than has been found in childhood ($r = .35$ in Furman & Buhrmester, 1985), which suggests that concerns over parental attention are probably not the primary basis of conflict among adult siblings.

Unlike the case in some research on children

(Furman & Buhrmester, 1985), relative status–power did not emerge as a dimension of adult sibling relationships. In adulthood, developmental differences between siblings are less salient than in childhood, and siblings therefore may have more egalitarian relationships. Moreover, strong presses may exist for sibling relationships to be egalitarian in adulthood. After all, what younger sibling is willing to acquiesce to an older one's "wisdom" once they have both reached adulthood?

Participants' and siblings' independent reports of their relationships were significantly correlated. This provides validational support for the ASRQ and is of substantive interest. As has been found in childhood (Furman, Jones, Buhrmester, & Adler, 1989), adult siblings had similar perceptions of warmth and conflict but were less similar in their views of rivalry. The indexes of warmth and, particularly, conflict are often overt and apparent to the two siblings. In contrast, rivalry for parental attention and affection may be a sensitive subject and one not shared between siblings.

In summary, the ASRQ appears to be a promising measure of adults' sibling relationships. Evidence of the reliability and validity of the sibling relationship dimensions derived from the ASRQ was encouraging. Correlations between the relationship dimensions and social desirability were minimal, and internal consistency estimates and 2-week test–retest reliabilities were high.

Correlates of Individual Differences in Adult Sibling Relationships

A number of significant associations were found between family structure variables and perceptions of sibling relationships. Siblings who were further apart in age perceived less conflict in their relationships than siblings who were close in age. Siblings of different genders reported less conflict in their relationships than siblings of the same gender. These findings are consistent with research on sibling relationships in childhood and adolescence (Bowerman & Dobash, 1974; Buhrmester & Furman, 1990; Furman & Buhrmester, 1985; Koch, 1960; Minnett et al., 1983).

It is not clear whether the effects of family structure variables carry over from childhood or whether they stem from contemporary interac-

tions in adulthood. That is, is there something about the current relationships of same-gender siblings, for example, that may make their interactions more conflictual than opposite-gender pairs, or do their perceptions come from earlier interactions? Longitudinal studies and observations of adult sibling interactions are needed to answer these questions.

The number of children in a family was negatively associated with warmth and positively correlated with rivalry. This finding is intriguing because almost all of these adults were no longer living together. It is not obvious how one can account for this result unless it reflects some residual effect of earlier experiences in childhood. That is, when families are larger, sibling relationships may have been less close and warm, and these relationships may have continued in that manner in adulthood. Similarly, siblings in large families may have viewed their parents as having limited resources of love and attention and may be more sensitive to discrepancies in their parents' behavior; thus, they may report more rivalry than siblings in smaller families.

In general, the correlations between family structure and sibling relationship quality were not large. As has been found in childhood, family constellation variables explain little of the variance in sibling relationship quality (Furman & Buhrmester, 1985; Stocker et al., 1989). Marked variation in relationship quality occurs within any particular type of family constellation as well as among different ones.

In the present study, factors other than family structure were more strongly associated with individual differences in adults' sibling relationships. Specifically, the amount of contact between siblings was positively correlated with perceptions of warmth and negatively correlated with rivalry. Siblings who have particularly warm relationships may maintain close contact with each other, and such contact may foster perceptions of warmth. Siblings who have rivalrous relationships may choose to maintain little contact with each other. At the same time, geographic distance was not significantly associated with characteristics of sibling relationships. In adulthood, as opposed to childhood, siblings can largely determine the amount of interaction they have. Even if they live far away from each other, adults can have a great deal of contact with their brothers and sisters by writing and telephoning and perhaps periodi-

cally seeing one another. This contact, rather than geographic proximity, is what was related to the qualitative features of their relationships.

Finally, adults who had high scores on psychological functioning reported lower levels of conflict in their sibling relationships than adults with worse mental health scores. Adults with poor psychological functioning may perceive their relationships as conflictual, and they may also behave in a manner that leads to conflicts between them and their siblings. Another possibility is that conflictual sibling relationships can contribute to poor psychological functioning if they raise individuals' stress levels. With correlational analyses, it is impossible to determine the direction of these effects. In future work, it would be interesting to determine whether the links between sibling relationship quality and mental health stem from relationship experiences in childhood and adolescence or whether the current relationship is more strongly associated.

It should be noted that contact was part of the same self-report questionnaire as the ASRQ. Thus, the associations between contact and sibling warmth may be inflated somewhat because of shared method variance. In fact, this study focused exclusively on adults' perceptions of their sibling relationships. Perceptions are central aspects of sibling relationships, but they do not provide a complete picture of the relationships. Subsequent research should include observations of adult brothers and sisters interacting. The present findings may provide some guidelines for such work. For example, it would be interesting to determine whether conflictual, rivalrous, and warm interactions are as independent of each other as the perceptions of them are. Similarly, it will be important to determine how patterns of interaction vary as a function of family structure variables, contact, and mental health.

Our sample was predominantly Caucasian and middle to upper middle class, and it was composed of undergraduate students. Research on different ethnic and socioeconomic groups, as well as on young adults who are not in college, is needed to determine the generalizability of the current findings. Finally, future work should determine whether the ASRQ is appropriate for examining sibling relationships in middle and late adulthood. It is our hope that the present study will encourage further re-

search into the longest lasting relationship in most adults' lives.

References

Abramovitch, R., Pepler, D., & Corter, C. (1982). Patterns of sibling interaction among preschool-age children. In M. E. Lamb & B. Sutton-Smith (Eds.), *Sibling relationships: Their nature and significance across the lifespan* (pp. 61–86). Hillsdale, NJ: Erlbaum.

Bedford, V. H. (1989a). Ambivalence in adult sibling relationships. *Journal of Family Issues, 10,* 211–224.

Bedford, V. H. (1989b). Sibling research in historical perspective. *American Behavioral Scientist, 33,* 6–18.

Begun, A. L. (1989). Sibling relationships involving developmentally disabled people. *American Journal of Mental Retardation, 93,* 566–574.

Bowerman, C. E., & Dobash, R. M. (1974). Structural variations in inter-sibling affect. *Journal of Marriage and the Family, 36,* 48–54.

Brody, G., Stoneman, Z., & Burke, M. (1987). Child temperament, maternal differential behavior and sibling relationships. *Developmental Psychology, 23,* 354–362.

Brody, G., Stoneman, Z., & McCoy, J. K. (1992). Associations of maternal and paternal direct and differential behavior with sibling relationships: Contemporaneous and longitudinal analyses. *Child Development, 63,* 82–92.

Buhrmester, D., & Furman, W. (1990). Age differences in perceptions of sibling relationships in middle childhood and adolescence. *Child Development, 61,* 1387–1398.

Cicirelli, V. C. (1982). Sibling influence throughout the lifespan. In M. E. Lamb & B. Sutton-Smith (Eds.), *Sibling relationships: Their nature and significance across the lifespan* (pp. 267–284). Hillsdale, NJ: Erlbaum.

Derogatis, L., & Melisaratos, N. (1983). The Brief Symptom Inventory: An introductory report. *Psychological Medicine, 13,* 595–605.

Dunn, J. (1983). Sibling relationships in early childhood. *Child Development, 54,* 787–811.

Furman, W., & Buhrmester, D. (1985). Children's perceptions of the qualities of sibling relationships. *Child Development, 56,* 448–461.

Furman, W., Jones, L., Buhrmester, D., & Adler, T. (1989). Children's, parents', and observers' perspectives on sibling relationships. In P. G. Zukow (Ed.), *Sibling interaction across cultures: Theoretical and methodological issues* (pp. 165–183). New York: Springer Verlag.

Gold, D. (1989a). Generational solidarity: Conceptual antecedents and consequences. *American Behavioral Scientist, 33,* 19–32.

Gold, D. (1989b). Sibling relationships in old age: A typology. *International Journal of Aging and Human Development, 28,* 37–51.

Hathaway, S. R., & McKinley, J. C. (1951). *MMPI manual.* New York: Psychological Corporation.

Koch, H. L. (1960). The relation of certain formal attributes of siblings to attitudes held toward each other and toward their parents. *Monographs of the Society for Research in Child Development, 25*(4, Serial No. 78).

Lanthier, R. P., & Stocker, C. (1992). *The Adult Sibling Relationship Questionnaire.* Denver, CO: University of Denver.

Lee, T. R., Mancini, J. A., & Maxwell, J. W. (1987). Sibling relationships in adulthood: Contact patterns and motivations. *Journal of Marriage and the Family,* 431–440.

Leigh, G. K. (1982). Kinship interaction over the family life span. *Journal of Marriage and the Family, 44,* 197–207.

McHale, S., & Gamble, W. (1989). Sibling relationships of children with disabled and nondisabled brothers and sisters. *Developmental Psychology, 25,* 421–429.

Minnett, A., Vandell, D., & Santrock, J. (1983). The effects of sibling status on sibling interaction: Influence of birth order, age spacing, sex of child, and sex of sibling. *Child Development, 54,* 1064–1072.

Neemann, J., & Harter, S. (1986). *Manual for the Self-Perception Profile for College Students.* Unpublished manuscript, University of Denver, Denver, CO.

Olson, P. H. (1977). Insiders' and outsiders' views of relationships: Research studies. In G. Levinger & H. L. Raush (Eds.), *Close relationships: Perspective on the meaning of intimacy* (pp. 115–135). Amherst: University of Massachusetts Press.

Paulhus, D. H. (1991). Measurement and control of response bias. In J. P. Robinson & P. R. Shaver (Eds.), *Measures of personality and social psychological attitudes* (pp. 17–59). New York: Academic Press.

Ross, H. G., & Milgram, J. I. (1982). Important variables in adult sibling relationships: A qualitative study. In M. E. Lamb & B. Sutton-Smith (Eds.), *Sibling relationships: Their significance across the lifespan* (pp. 225–249). Hillsdale, NJ: Erlbaum.

Seltzer, M. M. (1989). The three r's of life cycle sibships: Rivalries, reconstruction and relationships. *American Behavioral Scientist, 33,* 107–115.

Stocker, C. (1993). Siblings' adjustment in middle childhood: Links with mother-child relationships. *Journal of Applied Developmental Psychology, 14,* 485–499.

Stocker, C., Dunn, J., & Plomin, R. (1989). Sibling relationships: Links with child temperament, maternal behavior, and family structure. *Child Development, 60,* 715–727.

Stocker, C., & McHale, S. (1992). The nature and family correlates of preadolescents' perceptions of their sibling relationships. *Journal of Social and Personal Relationships, 9,* 180–195.

Stoneman, Z., & Brody, G. H. (1993). Sibling temperaments, conflict, warmth and role asymmetry. *Child Development, 64,* 1786–1800.

Teti, D. (1992). Sibling interaction. In V. B. Van Hasselt & M. Hersen (Eds.), *Handbook of social development: A lifespan perspective* (pp. 201–228). New York: Plenum.

Teti, D., & Ablard, K. (1989). Security of attachment and infant-sibling relationships: A laboratory study. *Child Development, 60,* 1519–1528.

Appendix

Adult Sibling Relationship Questionnaire Items

1. How much do you and this sibling have in common?
2. How much do you talk to this sibling about things that are important to you?
3. How much does this sibling talk to you about things that are important to him or her?
4. How much do you and this sibling argue with each other?
5. How much does this sibling think of you as a good friend?
6. How much do you think of this sibling as a good friend?
7. How much do you irritate this sibling?
8. How much does this sibling irritate you?
9. How much does this sibling admire you?
10. How much do you admire this sibling?
11. Do you think your mother favors you or this sibling more?
12. Does this sibling think your mother favors him/her or you more?
13. How much does this sibling try to cheer you up when you are feeling down?
14. How much do you try to cheer this sibling up when he or she is feeling down?
15. How competitive are you with this sibling?
16. How competitive is this sibling with you?
17. How much does this sibling go to you for help with non-personal problems?
18. How much do you go to this sibling for help with non-personal problems?
19. How much do you dominate this sibling?
20. How much does this sibling dominate you?
21. How much does this sibling accept your personality?
22. How much do you accept this sibling's personality?
23. Do you think your father favors you or this sibling more?
24. Does this sibling think your father favors him/her or you more?
25. How much does this sibling know about you?
26. How much do you know about this sibling?
27. How much do you and this sibling have similar personalities?
28. How much do you discuss your feelings or personal issues with this sibling?
29. How much does this sibling discuss his or her feelings or personal issues with you?
30. How often does this sibling criticize you?
31. How often do you criticize this sibling?
32. How close do you feel to this sibling?
33. How close does this sibling feel to you?
34. How often does this sibling do things to make you mad?
35. How often do you do things to make this sibling mad?
36. How much do you think that this sibling has accomplished a great deal in life?
37. How much does this sibling think that you have accomplished a great deal in life?
38. Does this sibling think your mother supports him/her or you more?
39. Do you think your mother supports you or this sibling more?
40. How much can you count on this sibling to be supportive when you are feeling stressed?
41. How much can this sibling count on you to be supportive when he or she is feeling stressed?
42. How much does this sibling feel jealous of you?
43. How much do you feel jealous of this sibling?
44. How much do you give this sibling practical Advice? (e.g. household or car advice)
45. How much does this sibling give you practical advice?
46. How much is this sibling bossy with you?

47. How much are you bossy with this sibling?
48. How much do you accept this sibling's lifestyle?
49. How much does this sibling accept your lifestyle?
50. Does this sibling think your father supports him/her or you more?
51. Do you think your father supports you or this sibling more?
52. How much do you know about this sibling's relationships?
53. How much does this sibling know about your relationships?
54. How much do you and this sibling think alike?
55. How much do you really understand this sibling?
56. How much does this sibling really understand you?
57. How much does this sibling disagree with you about things?
58. How much do you disagree with this sibling about things?
59. How much do you let this sibling know you care about him or her?
60. How much does this sibling let you know he or she cares about you?
61. How much does this sibling put you down?
62. How much do you put this sibling down?
63. How much do you feel proud of this sibling?
64. How much does this sibling feel proud of you?
65. Does this sibling think your mother is closer to him/her or you?
66. Do you think your mother is closer to you or this sibling?
67. How much do you discuss important personal decisions with this sibling?
68. How much does this sibling discuss important personal decisions with you?
69. How much does this sibling try to perform better than you?
70. How much do you try to perform better than this sibling?
71. How likely is it you would go to this sibling if you needed financial assistance?
72. How likely is it this sibling would go to you if he or she needed financial assistance?
73. How much does this sibling act in superior ways to you?
74. How much do you act in superior ways to this sibling?
75. How much do you accept this sibling's ideas?
76. How much does this sibling accept your ideas?
77. Does this sibling think your father is closer to him/her or you?
78. Do you think your father is closer to you or this sibling?
79. How much do you know about this sibling's ideas?
80. How much does this sibling know about your ideas?
81. How much do you and this sibling lead similar lifestyles?