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Intergenerational Solidarity and Support Between Adult Siblings

Using a Dutch national sample containing 1,259 triads (two siblings, one parent), we examined whether practical support and emotional support between siblings are enhanced by intergenerational solidarity and how this differs for brothers and sisters. Sibling support was affected by sibling dyad characteristics and by the relationship with the parent. Having a poor relationship and low contact frequency with the parent enhances sibling emotional support, pointing to a compensating mechanism, which is stronger among brothers. Sibling support is also positively related to parental support, suggesting a reinforcing mechanism, especially among sisters. The results contribute new information about influences on sibling support in adulthood and demonstrate the value of including family context variables in research on specific family relationships.

Adult siblings are important sources of love, support, aid, and companionship to one another (Cicirelli, 1995). White and Riedmann (1992) showed, for example, that about two thirds of the adults in a large national U.S. sample consid-

ered a sibling to be a close friend, half had contact with siblings at least once a month, and nearly a third would rely on a sibling for help in an emergency. Using a smaller regional sample, Eriksen and Gerstel (2002) similarly found evidence of practical as well as emotional support exchanges among adult siblings. White's (2001) longitudinal analysis contributed understanding of changes in patterns of sibling interaction and exchange across adulthood, with decline in proximity, contact, and exchanges in young adulthood, followed by stability of proximity and contact in the middle years and a small increase in exchanges in old age. As shown by Paul's (1997) examination of longitudinal data, sibling interactions and the quality of their relationships have an effect on their well-being, with the effects varying by gender.

Although such findings reveal the range of adult sibling support and variables influencing its provision, the literature is somewhat limited because of the focus on reports from one person or a dyad, giving insufficient attention to the embeddedness of sibling ties within families over the life course (Walker, Allen, & Connidis, 2005). Our research expands upon previous studies in three unique ways. First, besides examining data from two siblings, we move this line of research to the family level by including data from their parents. This approach reflects a life course perspective about enduring influences of family members on one another. Second, we analyze bidirectional support exchanges from the vantage point of both siblings simultaneously. Third, whereas previous studies investigated

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giving or receiving support in separate analyses (Hogan, Eggebeen, & Clogg, 1993; Parrott & Bengtson, 1999), we examine exchanges directly, by assessing both giving and receiving.

Our research is guided by a multidimensional conception of intergenerational solidarity focusing on closeness, value consensus, contact, and exchanges (Bengtson & Roberts, 1991). We propose that intragenerational solidarity is influenced by intergenerational solidarity and that support between siblings is influenced by family structure and solidarity. We focus on support because it reflects actual behavior, thereby making the content and benefits of sibling relationships tangible. Furthermore, investigating support is theoretically interesting, because it is related to outcomes that reflect well-being, such as various aspects of physical and mental health (House, Umberson, & Landis, 1988).

The central research question addresses the relative importance of dimensions of solidarity for fostering supportive behavior within sibling dyads. We expect that more support is exchanged between siblings from families characterized as high on closeness, value consensus, contact, and exchanges than from families with low solidarity. In general, people who like each other are more willing to help each other (Wellman & Wortley, 1990), so more affection is expected to yield greater support. Family members who share the same values have greater solidarity because they can understand one another and anticipate the other's needs (Avioli, 1989). In contrast, large differences in values between family members can be stressful (Fingerman, 2001). We look at consensus in family triads, expecting that sharing similar values with a parent, as well as with a sibling, is important for support between siblings. We assess values concerning marriage and gender because of their salience for family life. Having more contact makes it more likely that family members are informed about each other's lives. In a highly interactive family, one member can provide information on several others, enhancing cohesion. We attend to contact frequency as well. In highly interactive families, one member can provide information on several others, enhancing cohesion. Not only is contact frequency between siblings important, but in families where all members have frequent contact, siblings are likely to have stronger feelings of connectedness and to share more support exchanges (Eriksen & Gerstel, 2002; Suggs, 1989). Parental support to children might serve

as a good example for the children to support each other. That is, when parents are highly supportive, their children might be more inclined to support each other. Although highly supportive parents could diminish the need for support from siblings, it can be argued that having supportive parents reflects a strong orientation toward family, making it more likely that a sibling would go to another sibling for support instead of to a nonfamily member, such as a friend.

Because women tend to be the family kinkeepers who sustain inter- and intragenerational contacts (Liebler & Sandefur, 2002; Rosenthal, 1985), we account for gender of the provider and receiver of support as well as gender of the parent. Furthermore, we assess whether relationship quality, value consensus, and contact frequency with siblings and parents are equally important for brothers and sisters by including gender interaction effects.

Besides assessing the importance of different dimensions of solidarity, we include other known influences on sibling support. It is crucial to distinguish between receiving and providing support in order to control for the general tendency of people to overestimate their own contribution (Furnham & Dowsett, 1993). Given that proximity facilitates support (e.g., Eriksen & Gerstel, 2002; White & Riedmann, 1992), we assess geographical distance to the sibling and to the parent. Support provision tends to ebb and flow across the adult years and is more frequent among better educated persons (Felling, Fiselier, & Van der Poel, 1991; White, 2001; White & Riedmann, 1992), so we include age and education. Also, ordinal position is relevant in sibling research (Newman, 1991; White & Riedmann, 1992), and presence of a partner and children can restrict giving support to a sibling. Much support flows from parents to children (Komter & Vollebergh, 2002) and between partners (Dykstra, 1990) but the total amount of support that can be provided is limited because of time constraints. As the number of siblings increases, less time, energy, and money may be available for any given sibling (Dykstra & Knipscheer, 1995).

METHOD

Data came from the Netherlands Kinship Panel Study (Dykstra et al., 2005). They were gathered in 2002–2004, when 8,161 individuals between 18 and 80 years old were interviewed face-to-face in their homes on the topic of family solidarity

using a structured questionnaire (response rate = 45%). After the interview, all respondents were asked to complete a supplementary questionnaire; 92% of them returned it. In this original data set, compared to the Dutch population, women were overrepresented, especially women 35 to 54 years old, as were people with children at home. Young men (aged 18 to 30 years) and children still living with their parents were somewhat underrepresented.

Respondents, from here on called *anchors*, reported in the face-to-face interview on basic demographics of themselves, siblings, and parents. Additional information on several aspects of family solidarity was gathered on a random selection of up to two of the anchor's siblings and both parents. One of the siblings and one of the parents were randomly selected to approach directly with a written questionnaire if the anchor gave permission to contact them. Response by siblings and parents was selective. Coresident siblings and parents were more likely to return questionnaires than noncoresident relatives (64% vs. 37% for siblings and 63% vs. 40% for parents). Also, the better the relationship as perceived by the anchor, the higher the response rate.

In all, 2,731 sibling questionnaires were received, which constitutes a response rate of 36% of all eligible siblings, including those who were selected but for whom the anchor did not grant contact permission. Similarly, 2,108 parent questionnaires were received, which is a response rate of 39% of all eligible parents. There were 1,259 complete triads (representing 15.4% of all anchors), meaning that for 1,259 anchors, the self-completion questionnaires of the anchor, the randomly selected sibling, and the randomly selected parent were available. The data of these triads are used for the present analyses.

Measures

Practical and emotional support between siblings. Practical support was measured by asking whether support was given or received in the last 3 months with housework and with odd jobs. Response categories were 0 = *not at all*, 1 = *once or twice*, and 2 = *several times*. Answers on both questions were summed, creating a variable with values ranging from 0 to 4. Because a large number of anchors had not provided help, the scores were not normally distributed. Therefore, the variable was dichotomized so that 1 indicates *support provision* and

0 means *no support provision*. Table 1 shows that 33% of the siblings received practical support, whereas 35% reported providing support. Emotional support was tapped by asking whether advice was given or received in the last 3 months and whether interest was shown or received in the personal life of a sibling. The response categories were the same as for practical support, and this variable was dichotomized as well. The siblings answered the same questions in their written questionnaire. Emotional support was provided and received by the majority of the siblings, (93% and 94% respectively; Table 1).

Thus, the flow of practical and emotional support was measured for both providing and receiving. Also, the perspectives of both siblings were included by asking sibling A what was given to sibling B and asking sibling B what was received from sibling A, and vice versa. This approach creates four responses in every sibling dyad for every kind of support: giving as well as receiving according to anchor as well as sibling. Questions about practical support were only asked when the anchor did not live in the same household as the target sibling (93.6%). In total, 4,692 responses on practical support between siblings remained. The questions about emotional support exchanges were asked of all anchors and their siblings (1,259 dyads), leading to a total of 5,023 responses for emotional support between siblings, with 13 responses (.03%) missing.

Intergenerational and intragenerational solidarity variables.

Relationship quality. The quality of the relationship was measured by asking the anchor: "Taking everything together, how would you describe your relationship with [sibling/parent]?" Answering possibilities were 1 = *not great*, 2 = *reasonable*, 3 = *good*, and 4 = *very good*. The phrasing of the question was adopted from the National Survey of Families and Households (NSFH) (Sweet & Bumpass, 2002), except that response categories in the NSFH were on a 10-point scale. The same question was included in the sibling's written questionnaire, along with a parallel item on the quality of the relationship with the parent. The perspective of the parents was not used here. The average relationship quality with parents was somewhat higher than with siblings (3.33 vs. 3.16; see Table 1).

Table 1. Descriptive Statistics for Dependent, Family-Level, and Individual-Level Variables

	<i>M</i>	<i>SD</i>	Range	<i>n</i>
Sibling practical and emotional support (Level 1) ^a				
Practical support received	.33	.47	0 – 1	2,347
Practical support provided	.35	.48	0 – 1	2,345
Emotional support received	.94	.24	0 – 1	2,511
Emotional support provided	.93	.25	0 – 1	2,512
Intergenerational and parent variables (Level 2)				
Quality relationship with parent	3.33	.72	1 – 4	2,502
Value difference with parent	.64	.49	0 – 3.82	2,362
Contact frequency with parent	9.37	1.94	2 – 18	2,281
Practical support from parent	1.55	.58	1 – 3	2,279
Emotional support from parent	2.40	.53	1 – 3	2,512
Distance to sibling (km)	43.97	57.71	0 – 250	1,259
Distance to parent (km)	36.39	58.92	0 – 275	2,518
Mother (0 = <i>father</i>)	.64	.48	0 – 1	1,259
Parent's age (years)	65.53	10.84	38 – 94	1,259
Parent's education ^b	4.76	2.70	1 – 11	1,258
Parent's partner status (0 = <i>no partner</i>)	.71	.45	0 – 1	1,259
Sibling dyad and individual variables (Level 2)				
Quality relationship with sibling	3.16	.74	1 – 4	2,518
Value difference with sibling	.48	.37	0 – 2.09	1,202
Contact frequency with sibling	7.96	1.79	3 – 14	2,355
Female (0 = <i>male</i>)	.60	.49	0 – 1	2,518
Number of siblings	2.42	1.81	1 – 17	1,259
Age (years)	36.03	10.06	15 – 70	2,518
Older (0 = <i>younger sibling</i>)	.49	.50	0 – 1	2,518
Education ^b	6.93	2.23	1 – 11	2,518
Partner status (0 = <i>no partner</i>)	.68	.47	0 – 1	2,518
Parental status (0 = <i>no children</i>)	.55	.50	0 – 1	2,518

^aResponses from both siblings summed. ^b1 = *incomplete primary school*, 10 = *postgraduate education*.

Marriage and gender values. Values related to marriage and gender were measured in the written questionnaires of the anchor, the sibling, and the parent with 11 items, of which 7 were developed for the Netherlands Kinship Panel Study (see Verweij, 2002), and 4 were adopted from the Panel Study of Social Integration in the Netherlands 1987 – 1995 (see De Jong & Liefbroer, 1998). Examples of these items are “A woman must quit her job when she becomes a mother.” and “It is best to divide tasks and responsibilities in a relationship according to the customs, tradition, and rules that have always been in force.” The answers were recorded on a 5-point scale, ranging from 1 = *strongly agree* to 5 = *strongly disagree*. Items were recoded so that higher scores represented more egalitarian values and then combined into a scale by taking the mean: $\alpha = .83$ for the anchors and $\alpha = .84$ for both the siblings and the parents.

When more than three items were missing, no scale score was calculated. Consensus on values concerning marriage and gender was determined by computing the differences between the mean scores of both siblings, the anchor and the parent, and the sibling and the parent. Higher difference scores imply less consensus on these family-related values.

Contact frequency. Frequency of contact was measured by asking how often actual face-to-face contact took place as well as contact by phone, letter, or e-mail in the past 12 months with both the anchor and the sibling. Response categories ranged from 1 = *never* to 7 = *daily*. The scores on face-to-face contact and on contact by phone, letter, or e-mail were summed to obtain one contact variable with a range of 2 to 14. No questions concerning the frequency of contact were asked of siblings sharing a household.

Contact frequency with the parent was obtained from the anchors and the siblings who did not live with the parent in the triad. Average scores for contact with siblings was 7.96, with parents, 9.37 (Table 1).

Parental support. The anchor and the sibling both evaluated parental support. Practical support and emotional support received from parents were measured in the same way as for the dependent variables. The mean score was taken, such that scales of 1 to 3 were constructed for practical and emotional support. Because the distribution for the parental support variables was less skewed than for sibling support, the variables were entered as continuous variables rather than dichotomized. Anchors and siblings living with the parent did not answer questions on practical support.

Gender. We include gender as well as gender composition of the dyad by adding a dummy for gender and an interaction with gender of the sibling. Table 1 shows that the sample was dominated by women. Further analysis revealed that 62% of the anchors were women, 58% of the siblings were sisters, sister-sister dyads were most common (37%), and brother-brother dyads were least represented (17%) (data not displayed).

Control variables. Three kinds of control variables were entered in the model: dummy variables related to giving versus receiving support, the anchor's and sibling's demographic characteristics, and the parent's demographic variables. With regard to giving versus receiving support, we controlled for two conditions in the data. First, a dummy variable was constructed to distinguish between whether the response referred to giving or to receiving support. Second, another dummy variable indicated whether the response came from the anchor or from the sibling.

At the level of the anchor and the sibling, age, the natural logarithm of geographical distances in kilometers to the sibling and the parent, and educational level of the siblings were included. Age was measured in years ($M = 36$ years; Table 1) and educational level on a 10-point scale. Dummy variables were included to control for sibling birth order, presence of a partner, and presence of children. The number of siblings was included as a continuous variable. We also controlled for gender, age, and educational level of the parent. Finally, the parent's partner status was included as a dummy variable. In the maj-

ority of cases, this partner was the other parent, but repartnered parents were also included in this category.

Missing Data

Given that triads were analyzed, data could be missing from the anchor, the sibling, or the parent. For the dependent and independent variables concerning perceptions of support exchange and solidarity in different domains, missing values were not imputed, and the missing values are automatically ignored in the analyses. For the control variables, missing values were minimized as follows. In principle, data are gathered from the person they pertain to. For the sibling dyads, the control variables include age, gender, educational level, and the presence of a partner and of children for the anchors and the siblings, which were taken from reports by the anchors and the siblings, respectively. But when information from the sibling was missing, responses provided by the anchor about the sibling were used. Geographical distances between anchor, sibling, and parent were calculated using information obtained from the anchor, as was the number of siblings. Parent's gender, educational level, and partner status came from the parent questionnaires, but when this information was missing, data provided by the anchor about the parent were used. When all reports were missing, the value was set to missing and was ignored in the analyses. Table 1 reports the number of observations for all dependent and independent variables. As an additional check, all models were run with missing values imputed by single imputation (Acock, 2005), and results remained stable.

Multilevel Analysis of Dyads in Families

Because we are using data from multiple family members to study dyadic behavior in a family context, we have nonindependent data (Kenny, Mannetti, Pierro, Livi, & Kashy, 2002). The nested structure of the data, in which relationships are nested within dyads that are nested in families, causes the observations within the sibling dyads to be more similar than those between the dyads. Multilevel analysis is a useful tool for such nested data, because it takes this nonindependence into account (Sayer & Klute, 2005). Using standard statistical approaches such as fixed-effects models for nonindependent data

would violate the assumption of independence of the observations. When this assumption is violated, estimates of the standard errors will be too small, resulting in many spuriously significant effects (Hox, 2002).

We use directed relational data (Gerlsma, Snijders, Van Duijn & Emmelkamp, 1997), where two siblings report on whether they provided support to each other and whether they received support from each other. This complex data structure was modeled in the following way. Two levels were distinguished: the higher level is the family (and the dyad, given that there is only one dyad per family) and every Level 2 unit contains four Level 1 units, representing the sending and the receiving roles of both anchors and siblings: (Y1) support provided to the sibling, reported by the anchor, (Y2) support received from the sibling, reported by the anchor, (Y3) support provided to the anchor, reported by the sibling, (Y4) support received from the anchor, reported by the sibling.

Models were estimated for sibling emotional support and practical support separately. First, to test the hypothesis regarding the effect of the different dimensions of parental solidarity on sibling support, two nested models were estimated for both dependent variables. The first model tests the independent effects of the solidarity dimensions in the parent-child relationship on sibling support by including main effects only. This design tests the relative influence of the dimensions of solidarity on sibling support. In the second model, interactions were calculated between the sibling scores and the parent-child scores on relationship quality, value difference, and contact frequency. This model tests whether the effect of the siblings' perceptions of solidarity on their supportive behavior depends on solidarity in the same dimension in the relationship with the parent. For instance, a significant negative interaction effect between contact with the parent and the sibling would indicate that, if there is much contact with the parent, it matters less whether siblings talk to each other much for how likely they are to support each other. Given the significance of women in sustaining family life (McGoldrick, 1991), additional models were estimated including interactions with gender of the siblings and gender composition of the sibling dyad.

The dependent variables, sibling practical support and sibling emotional support, were dichotomized, making logistic multilevel analy-

sis appropriate. Coefficients can be interpreted by taking the antilog (e^b) to determine how strongly the odds of support are increased or decreased when the independent variable increases by 1. For interpretation purposes, all variables except the dummy variables were centered around the mean. Coefficients can be interpreted in relation to the average score on that variable. Explained variance was calculated using an extension of the McKelvey and Zavoina measure (Snijders & Bosker, 1999).

RESULTS

The results of the logistic multilevel analysis are presented in Table 2. Model 1 shows the results for practical support and Model 2 for emotional support. Models 1A and 2A provide the main effects for the sibling and the parent variables. Models 1B and 2B show the additional effects of the interactions of the sibling and parent variables. Relationship quality, value consensus, contact with siblings and parents, and parental support are included in the models simultaneously. Because the Level 1 variance is a constant for binomial distributed variables, this figure is omitted from Table 2 (Snijders & Bosker, 1999). Overall, the results for sibling practical and emotional support are very similar.

We hypothesized that more support is exchanged between siblings from families characterized as high on closeness, value consensus, contact, and exchanges. We confirmed this expectation with regard to parental support only: Siblings with parents who provide more emotional support exchange more practical and emotional support, and siblings with parents who provide more practical support exchange more practical support with each other (Models 1A and 2A). Contrary to our expectations, results showed that when the relationship with a parent was poorer, more support was exchanged between siblings. This result points in the direction of compensation. It appears that siblings compensate for a poor relationship with a parent by turning to each other. Value consensus and contact frequency with the parent did not have a direct effect on sibling support.

Women were less likely to exchange practical support with siblings. They were also more likely to exchange emotional support, but only with sisters, as is shown by the significant interaction effect. As expected, a more positive relationship

Table 2. Results of Multilevel Logistic Regression Analysis of Practical Support (Models 1, n = 4,692) and Emotional Support (Models 2, n = 5,023)

	Practical Support						Emotional Support						
	1A Siblings + Parent		1B Siblings + Parent + Interaction		2A Siblings + Parent		2B Siblings + Parent		2B Siblings + Parent + Interaction				
	B	SE	e^B	B	SE	e^B	B	SE	e^B	B	SE	e^B	
Fixed effects													
Intercept	-.17	.23		-.10	.23		5.00***	.51		5.31***	.53		
Relationship quality parent	-.40***	.09	.67	-.41***	.09	.67	-.38**	.15	.69	-.49***	.20	.55	
Relationship quality sibling × Relationship quality parent				-.22*	.10	.80				-.21	.16	.81	
Gender value difference, parent-child	-.20	.11	.85	-.22*	.11	.80	-.35	.19	.70	-.26	.21	.77	
Value difference siblings × Value difference parent-child				.33	.25	1.39				-.62	.43	.54	
Contact frequency parent ^a	-.07	.03	.94	-.06	.03	.94	-.11	.06	.90	-.22***	.07	.80	
Contact frequency siblings ^a × Contact frequency parent				-.03	.02	.97				-.11***	.03	.90	
Practical support from parent	.70***	.10	2.01	.71***	.10	2.03	.12	.27	1.13	.12	.23	1.12	
Emotional support from parent	.52***	.12	1.68	.50***	.12	1.64	1.74***	.22	5.71	1.77***	.22	5.55	
Female (0 = male)	-.36**	.12	.70	-.40**	.12	.67	.10	.22	1.11	.06	.22	1.06	
Female × sister	.14	.14	1.15	.16	.14	1.17	.79**	.30	2.14	.80**	.30	2.34	
Relationship quality sibling	.36***	.08	1.44	.37***	.08	1.44	1.46***	.16	4.33	1.47***	.16	4.34	
Gender value difference, siblings	-.29	.15	.75	-.29	.15	.75	-.45	.28	.64	-.26	.29	.77	
Contact frequency siblings	.50***	.04	1.65	.52***	.04	1.68	.54***	.09	1.71	.57***	.09	1.77	
Receiving (0 = providing)	-.12	.08	.89	-.12	.08	.89	-.06	.16	.94	-.06	.16	.94	
Sibling data (0 = anchor data)	.15	.08	1.16	.15	.08	1.16	-.24	.16	.79	-.24	.16	.79	
Random effects													
Random intercept variance	1.15	.08		1.13	.08		1.97	.17		1.97	.17		
df	23			26			23			26			
Pseudo-R ²	.36			.37			.48			.48			

Note: Controls are sibling age, oldest sibling, sibling's and parent's education, sibling's and parent's partnership and parental status, distance (natural log) to sibling and to parent, number of siblings, and data mother or father (omitted from the table). e^B = exponentiated B.

^aIncludes face-to-face and other contact (phone, e-mail, letter).

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

and more frequent contact with a sibling was associated with greater sibling practical and emotional support exchange.

Models 1B and 2B incorporated interaction terms to assess the joint effects of solidarity dimensions as reported by siblings and parents. These interactions had different effects on sibling practical (1B) and emotional (2B) support exchanges. Interaction effects involving relationship quality, family value differences, and contact frequency had significant effects on either sibling practical support or sibling emotional support.

After including the relationship quality interaction term, the main effects of relationship quality with the sibling and with the parent remained constant for both sibling practical and sibling emotional support, but a negative interaction effect occurred for practical support. This result indicated that the effect of sibling relationship quality on sibling support is weaker for those who have a more positive relationship with the parent, illustrating the possible role of compensation in family interactions. Conversely, when the parental relationship quality was poor, having a positive relationship with the sibling strongly influenced practical support exchange. Therefore, a positive relationship with the parent seems to compensate for a less positive relationship with a sibling, leading to similar amounts of practical sibling support. This interaction effect was not significant for emotional support.

Addition of the family value differences interaction term resulted in a significant main effect of parent-child value difference on practical support, indicating that, after controlling for some (although statistically insignificant) interaction between parent's and siblings' family value differences, smaller value differences with the parent appeared to enhance siblings' practical support exchange.

Inclusion of the contact frequency interaction term had a significant effect on sibling emotional support. More contact with the sibling and less contact with the parent was linked to greater emotional support exchange with the sibling. The positive effect of contact frequency with the sibling was especially strong for those who have little contact with their parents. At the same time, parental contact appears to compensate for amount of sibling contact: Less contact between siblings was necessary for a comparable likelihood of sibling emotional support when the parent was contacted more frequently.

Even though people are likely to report that they give more than they receive (Furnham & Dowsett, 1993), this result did not appear in our analysis. The dummy variable used to control for the direction of exchange, giving versus receiving, was not significant. Similarly, there was no difference in support according to whether the information came from the anchor, who was interviewed face-to-face, or from the sibling, who completed a written questionnaire. In additional analyses, the same models were estimated including random slopes for both giving versus receiving and whether the response came from anchor or sibling, but again no significant effects for these two variables were found.

In further exploration of the effects of gender, interactions with gender and gender composition of the sibling dyad were added separately in Models 1B and 2B. Although none of the interactions yielded significant results for sibling practical support, several significant interactions were found for sibling emotional support (displayed in Table 3). The results indicate that relationship quality and contact frequency are more important for support among sisters than among brothers. Furthermore, for women we found that, in line with our hypothesis, higher contact frequency with parents reinforces the effect that sibling contact has on sibling support. This positive

Table 3. Results of Multilevel Logistic Regression Analysis of Emotional Support ($n = 5,023$): Significant Interactions With Gender and Gender Composition of the Sibling Dyad

	Model 3		
	<i>B</i>	<i>SE</i>	<i>exp B</i>
Interactions with gender			
Relationship quality * female	1.16***	.27	3.21
Contact sibling * female	.31*	.13	1.36
Contact parents * contact sibling * female	.11*	.05	1.12
Interactions with sister-sister dyad			
Relationship quality sibling * sister-sister dyad	.81*	.33	2.34
Relationship quality sibling * Relationship quality parent * sister-sister dyad	.50*	.25	1.65
Contact sibling * contact parent * sister-sister dyad	.21**	.07	1.23

Note: Interactions were entered separately into Model 2B. * $p < .05$. ** $p < .01$. *** $p < .001$.

interaction was also found for relationship quality and contact frequency in sister-sister dyads.

DISCUSSION

This study examined the importance of the intergenerational relationship for support among siblings. The general hypothesis was that when the relationship with a parent is closer, with a stronger consensus on values and more contact, more support would be exchanged among siblings. This expectation was confirmed for parental support: Parents who support their children more seem to create a family atmosphere in which helping each other is important, given that siblings help each other more when they receive more support from their parents. Our study found that parental support is a reinforcing mechanism in the siblings' relationship, sustaining our idea that parental support functions as an example for the siblings and reflects a general orientation toward family interaction.

With regard to relationship quality, we did not find support for our expectations, but found a much more complex pattern of effects. The quality of the parental bond was negatively related to sibling support. Also, a positive relationship with a parent or a sibling seems to compensate for deficits in the other bond. That is, if the relationship with a sibling is less positive, the relationship with a parent is more positive.

Specifically, we demonstrated that sibling support depends on more than the quality of the sibling relationship. One important variable is contact frequency. To provide support, contact is necessary, so contact frequency represents accessibility (Goetting, 1986) and is positively related to support exchange in sibling relationships (White & Riedmann, 1992). Our study shows that for emotional support between siblings, lower accessibility of a parent in conjunction with higher accessibility of a sibling is influential. This result indicates that siblings and parents can compensate for each other in the sense that if one family tie is less accessible, a more accessible one might foster emotional support.

The way the parental relationship is related to emotional support among siblings differs for men and women. The expected positive relation between the parent-child and sibling bond was to some extent found among sisters, where more contact and a more positive relationship with parents seems to increase support among sisters. This result suggests that among women there is

more evidence of reinforcement by the parental bond, whereas for men compensation plays a bigger role.

Thus, supportive interactions between siblings are to a certain extent related to the larger family context. The influence of the parent is not limited to childhood, but endures into adulthood. Our results show that the effect of the relationship with parents is additional to several, though not all, characteristics of the siblings and their relationship. Hence we conclude that when research is limited to only the siblings themselves, a relevant part of the explanation of sibling support is omitted. We provide specific evidence of family-level influence on sibling support: Contact frequency and relationship quality illustrate mechanisms of compensation and parental support demonstrates reinforcement.

Several limitations of this study should be mentioned. First, the data contained mostly positive relationships, because respondents are more likely to give permission to approach family members with whom they have positive ties. Therefore, we cannot draw conclusions about sibling interactions in very problematic family relationships from this research. Second, the data are cross-sectional. Longitudinal data would help to capture the waxing and waning of compensation and reinforcement dynamics over the course of adulthood. Third, the data permitted examination only of the influence of parents on the sibling relationship. We recognize that all family members influence each other and our unidirectional focus oversimplifies the multifaceted reality of family life. Furthermore, the available data could not capture other kinds of complexities that might be revealed by giving attention to specific family circumstances and the more psychological aspects of family interaction. It would be useful to include more information on family members' personality characteristics and life events such as a recent death or personal problems. Finally, in our study, relationship quality was measured with only one item that reflects general relationship quality but does not provide detail about different aspects of relationship quality, such as closeness, companionship, and affection.

Nevertheless, our results contribute new information about influences on sibling support in adulthood and point in interesting directions for future research. The coexistence of reinforcement and compensation in sibling relationships as well as gender differences related to these influences invite further investigation. Are these

mechanisms of family influence universal across relationship types? How do they come into existence and do they endure throughout adulthood? Do they break down under conditions of extreme stress or strife? In addition, further investigation of the different solidarity dimensions would be theoretically interesting. Under what family circumstances might one or another form of solidarity be especially salient? Do aspects of solidarity change over the course of individual lives and family trajectories? To what extent do solidarity dimensions reported by children affect the quality of parental relationships with their spouses or partners? How can solidarity dimensions be extended beyond the study of dyads to examination of interaction patterns within whole families? Are there differences in the importance of these solidarity dimensions between fathers and mothers as well as brothers and sisters?

This study has demonstrated the importance of including family context variables in research on specific family relationships. When research isolates individuals or dyads from the family group, important family-level processes can be missed. By including a third family tie in the analysis, we were able to study the sibling relationship within the family group and to uncover some key nuances related to family influences on adult sibling support.

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