Solidarity and Ambivalence: Comparing Two Perspectives on Intergenerational Relations Using Longitudinal Panel Data

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Objectives. Research on family relations has extensively used the intergenerational solidarity model proposed by Bengtson and colleagues. Recently, the relevance of this model for explaining changes in family relations has been questioned, and the concept of intergenerational ambivalence has been proposed as a relevant addition to the model, supposedly acting as a catalyst, and thus serving as an explanation for changes in family relations. This study tests both the viability of the intergenerational solidarity model and the hypothesized effect of ambivalence employing longitudinal data.

Method. We use data from 2 waves of the Netherlands’ Kinship Panel Study on parent–adult child relationships to estimate latent variable structural equation models.

Results. Affection, association, and support between family members are core, mutually reinforcing dimensions of solidarity. The hypothesis that ambivalence is a catalyst for change in family relations was not confirmed. Adding conflict separately revealed that it only affects the core solidarity dimensions but is itself, like normative and structural solidarity, not influenced by them.

Discussion. The relevance of the concept of intergenerational ambivalence for studying changes in family relations can be questioned. The viability of the intergenerational solidarity model is, however, confirmed. The concept of intergenerational ambivalence might be further explored in qualitative studies on family change.

Key Words: Family sociology—Intergenerational relations—Longitudinal methods—Structural equation models.

RESEARCH on family relations and family solidarity has heavily relied upon the model of intergenerational solidarity as proposed by Bengtson and Roberts (1991) (e.g., Grzywacz & Marks, 1999; Lee, Netzer, & Coward, 1994; Schwarz, Trommsdorff, Albert, & Mayer, 2005; Silverstein & Long, 1998; Whitbeck, Hoyt, & Huck, 1994; White, 1994; Wood & Liossis, 2007). The authors proposed that six dimensions of solidarity could be distinguished in intergenerational family relations: associational (frequency and patterns of interaction), affectional (positive sentiment), functional (help exchange), normative (endorsement of familial obligations), consensual (degree of agreement on values, attitudes, and beliefs among family members), and structural solidarity (availability of family members, i.e., opportunity structure). Additionally, these dimensions are proposed to be structurally related to each other, meaning that previous levels of solidarity on one dimension would affect future levels of solidarity in other dimensions.

Although six dimensions were distinguished, almost all the studies utilizing the theoretical model have focused on either one or on a small selection of the six dimensions of intergenerational solidarity (e.g., Klein Ilkink, Van Tilburg, & Knipscheer, 1999; Lawton, Silverstein, & Bengtson, 1994; Silverstein & Marenco, 2001; Starrels, Ingersoll-Dayton, Neal, & Yamada, 1995; for an overview, see also the appendix of Ter Bekke et al., 2007). In these studies, the solidarity model is merely used as an operationalization for measuring certain dimensions of intergenerational solidarity, while failing to address the structural relations among the dimensions. Moreover, the few studies that did test the structural relations made use of cross-sectional data (Bengtson & Roberts, 1991; Rossi & Rossi, 1990), whereas longitudinal (panel) data are needed to assess causality (Sikkel & Hoogendoorn, 2008).

To add to these unsolved theoretical concerns, a debate has been initiated recently on whether the model of intergenerational solidarity should be supplemented with, incorporated in, or even be replaced by the concept of intergenerational ambivalence (Bengtson, Giarrusso, Mabry, & Silverstein, 2002; Connidis & McMullin, 2002a, 2002b; Curran, 2002; Lowenstein, 2007; Luescher & Pillemer, 1998; Lüscher, 2002). It has been argued that the solidarity model overemphasizes the harmonious and positive aspects of family life, neglecting conflicts and other negative sides of family relations (Hammarström, 2005). To arrive at a more accurate conceptualization of family life, one should include both positive and negative aspects in the study of family relations. The concept of intergenerational ambivalence (Connidis & McMullin, 2002b; Luescher & Pillemer, 1998; Smelser, 1998) has been proposed to do so. It has
generally been defined as the coexistence of contradictory feelings or (behavior following from) norms, although definitions vary across studies. Feelings of ambivalence are believed to have a negative impact on one’s psychological well-being as well as on decisions to relieve the ambivalence (Connidis & McMullin, 2002a; Luescher & Pillemer, 1998). Although the theory draws attention to possible changes in family relations over time, existing empirical research mainly addresses the occurrence, background, and nature of ambivalence (e.g., Fingerman, Pitzer, Lefkowitz, Birditt, & Mroczek, 2008; Kiecolt, Blieszner, & Sava, 2011; Lowenstein, 2007; Pillemer & Suitor, 2002; Van Gaalen & Dykstra, 2006; Willson, Shuey, Elder, & Wickrama, 2006). Thus, like with the model of intergenerational solidarity, there is a gap between the theoretical considerations behind the concept of intergenerational ambivalence and the type of research questions addressed in empirical research.

The present study will address two research questions with the aim to bridge these gaps. First, we will investigate whether the original model of intergenerational solidarity is indeed a structural model. Do the different dimensions of intergenerational solidarity affect each other, and if so, do they affect each other in the manner as proposed by Bengtson and colleagues? In this article, we will, for the first time, do a full-blown test of the complete model, incorporating all dimensions of solidarity, while making use of longitudinal data. Second, we want to examine whether the experience of intergenerational ambivalence is indeed a driving force of changes in family relations. More precisely, our question is whether and how ambivalence affects intergenerational relations. Two different operationalizations of intergenerational ambivalence have been used in the previous literature: Sociological (or structural) ambivalence, which refers to conflicting norms and behavior (Connidis & McMullin, 2002b; Coser, 1966; Luescher & Pillemer, 1998; Merton & Barber, 1963), and psychological ambivalence or the experience of contradictory feelings toward the same object or individual (Bleuler, 1914; Freud, 1919; Luescher & Pillemer, 1998; Raulin, 1984; Weigert, 1991). In the current study, we focus on the existence of psychological ambivalence in intergenerational relations due to the lack of a well-tested measurement of sociological ambivalence. Additionally, we explore whether the suggestion by Bengtson and colleagues (2002) that adding conflict as a separate dimension to the original model of intergenerational solidarity can adequately account for possibly contradicting elements of family life.

**The Model of Intergenerational Solidarity**

Central to the earliest theoretical considerations of the intergenerational solidarity model were the theories by Homans (1950) and Heider (1958) on solidarity in small groups. Their main assumption was that affection, associational, and consensus are interdependent dimensions of a single higher order construct of solidarity. However, empirical tests of the original model did not find strong correlations between consensus on the one hand and affection and association on the other (Atkinson, Kivett, & Campbell, 1986; Roberts & Bengtson, 1990). A strong correlation between affection and association was nonetheless found. Based on these findings, we would expect that affection and association are mutually reinforcing dimensions of intergenerational solidarity over time. We extend this hypothesis to include functional solidarity as well because the exchange of help presupposes physical contact, and more affection will most likely positively influence the exchange of help. The exchange of help is also expected to influence future levels of affection and contact. Our first hypothesis, then, reads

H1: Affectional solidarity, associational solidarity, and functional solidarity will be mutually reinforcing, i.e., higher levels of one of these dimension of solidarity will positively influence future levels of solidarity on the two other dimensions in parent–child relations.

As Roberts, Richards, and Bengtson (1991) argued, the model of intergenerational family solidarity represented a refocus on the Gemeinschaft nature of families (Tönnies, 1887). The central premise of the concept of Gemeinschaft is that strong bonds between individuals are formed on the basis of normatively prescribed obligations. These normative obligations prescribe how relations should be expressed, both in terms of affection and behavior. For parent–child relations, it can thus be expected that a strong commitment to familial norms results in emotionally closer relations with higher levels of interaction, including both contact and the exchange of help. We arrive at the second hypothesis, which reads

H2: The more parents and children endorse norms of familialism (normative solidarity), the higher future levels of associational solidarity, affectional solidarity, and functional solidarity between parents and children will be.

In addition to familial norms, an important determinant of family interactions is the availability of family members. Based on previous research (Litvak, 1985; Riley & Riley, 1986), Bengtson and Roberts (1991) argued that greater geographical distances have a negative influence on the amount of face-to-face contact or the exchange of help with household tasks and odd jobs. Therefore, the third hypothesis reads

H3: The opportunity structure (structural solidarity) will enable (or constrain) future levels of associational solidarity and functional solidarity between parents and children.

Assuming that the affection felt for one’s parents is independent of the geographical distance between the parent and child, no effect is expected for the opportunity structure on future levels of affectional solidarity between parents and children. Combined, these three hypotheses represent the model of intergenerational family solidarity and are intended to test the causal relations among the dimensions of solidarity (see also, p. 24, Figure 1 in Roberts et al., 1991).
The Concept of Intergenerational Ambivalence

In recent years, the model of intergenerational solidarity has been criticized as depicting an overly positive view toward family relations, neglecting the negative sides of family life (e.g., Connidis & McMullin, 2002b; Hammarström, 2005; Lowenstein, 2007; Luescher & Pillemer, 1998). It has been argued that family relations are, perhaps, the most evident examples of close social relationships in which opposite feelings (e.g., psychological ambivalence; affection vs. conflict) are experienced, partly because of the involuntary nature of family relations. Indeed, empirical research has shown that a significant amount of intergenerational relations can be typified as ambivalent (e.g., Lowenstein, 2007; Pillemer & Suitor, 2002; Van Gaalen & Dykstra, 2006).

Both Luescher and Pillemer (1998) and Connidis and McMullin (2002b) emphasize that the focal point of interest in research on intergenerational ambivalence should be the way in which ambivalence is negotiated and managed. The experience of ambivalence is hypothesized to act as a catalyst for changes in family relations as it is assumed to increase stress and decrease well-being (Luescher & Pillemer, 1998). Because the previous literature does not provide us with any clues about the nature of the attempts of family members to change their relationships so that ambivalence is diminished, we formulate an undirected hypothesis. Assuming that family relations are characterized by dynamic processes and change and that ambivalence can act as a driving force behind these processes, we hypothesize that

H4: The experience of intergenerational ambivalence in family relations will affect future levels of solidarity.

On the other hand, given the fairly recent development of the concept, theoretical debate has not yet led to clear-cut predictions regarding the ways in which solidarity, conflict, and ambivalence are related to each other. Stating that the model of intergenerational solidarity is fluid and open to revision, Bengtson and colleagues (2002) suggest that incorporating conflict into the model of intergenerational solidarity is sufficient to account for the possible contradictory aspects of family life. Unfortunately, the authors did not elaborate on how conflict is structurally related to the other dimensions of solidarity. For instance, does added contact increase or decrease the likelihood of conflict? Therefore, in the current study, we will explore this alternative conceptualization of family relations.

Method

Data

To test the hypotheses, we analyze data from the public release file of a large-scale study of family relations: The Netherlands Kinship Panel Study (NKPS). The NKPS is a longitudinal, nationally representative study among 8,161 respondents (6,091 respondents in Wave 2), aged 18–79 years at Wave 1. The first and second waves were conducted from 2002 to 2004 (Dykstra et al., 2005) and from 2006 to 2007 (Dykstra et al., 2007), respectively. The response rate in the first wave was 45%, and the attrition rate in the second wave was 25%, which is comparable to that of other large-scale family surveys in the Netherlands (see Dykstra et al., 2005, 2007). Response rates in the Netherlands tend to be lower than elsewhere, and they seem to be declining over time (De Leeuw & De Heer, 2002). The Dutch appear to be particularly sensitive about privacy issues. What makes the NKPS unique and appropriate for the present study is that it contains, at both waves, indicators for all dimensions of family solidarity distinguished in the model of intergenerational family solidarity (Bengtson and Roberts, 1991; Mangen, Bengtson, & Landry, 1988).

To test the hypotheses on the structural relations between the different solidarity dimensions for intergenerational family relations (i.e., parent–adult child relations), we used only those respondents who still had at least one living parent at both time points and with whom the respondent had at least once face-to-face contact in the past 12 months at Wave 1. If both parents of the respondent were still alive at both time points, one parent was randomly selected. This resulted in an N of 3,453 parent–child relations. All information on the parent–child relation was derived from responses from the adult child.

Measures

The following indicators, all newly designed for the NKPS (Dykstra et al., 2005), are used for measuring the different dimensions of family solidarity (headed under the dimension, they are supposed to measure):

Associational solidarity.—Associational solidarity was measured by (a) the amount of face-to-face contact with the parent and (b) the amount of contact through e-mail, phone, and by letter in the last 12 months. The original answer categories for each mode of contact consisted of seven categories (ranging from 1 = never to 7 = daily). These were recoded into approximations of days per year (never = 0; once a year = 1; a few times a year = 3; at least once a month = 12; at least once a week = 52; several times a week = 156; and daily = 300), after which a log transformation was performed to avoid the influence of heteroscedasticity (Kalmijn, 2006; Waite & Harrison, 1992).

Affectional solidarity.—Respondents were asked to assess the quality of the relationship with the parent. The question was: “Taking everything together, how would you describe your relation with your [father/mother]?” The respondents could choose from four answer categories: 0 = not great; 1 = reasonable; 2 = good; and 3 = very good.

Functional solidarity.—Respondents were asked to report the amount of support given to and received from the parent in the last 3 months. The following types of support were
distinguished: (a) help with housework, such as preparing meals, cleaning, fetching groceries, doing the laundry; (b) help with practical matters such as chores in and around the house, lending things, transportation, moving things; (c) showing an interest in the personal life of the other; and (d) getting counsel or good advice. Response categories for all types of support were 0 = not at all; 1 = once or twice, and 2 = several times. Additionally financial support in the last 3 months was added, with answer categories ranging from 0 = no financial support; 1 = less than 500 euro; and 2 = more than 500 euro.

**Normative solidarity.**—Four items were used to measure the degree to which the respondent supports family norms and/or obligations. Examples of items are “One should always be able to count on family” and “Family members should be ready to support one another, even if they don’t like each other.” Response categories ranged from 0 = totally disagree to 4 = totally agree. Although no composite scores were used in the analyses, we want to report that the α was .859 at both waves.

**Structural solidarity.**—Structural solidarity was measured by the geographical proximity between the respondent and the parent and/or sibling. Postal codes were used to compute the distance separating each other’s residence. To avoid the influence of heteroscedasticity, a log transformation was performed (Kalmijn, 2006; Silverstein, 1995).

Previous studies on intergenerational ambivalence have commonly relied on two approaches. The first approach is to ask respondents direct questions about ambivalence, such as whether their feelings toward the other are mixed or one sided. The second approach, and the one we will use in our study, is to measure an individual’s contradictory feelings, norms, and/or behavior, separately, and combine these into an ambivalence index using a mathematical formula (Thompson, Zanna, & Griffin, 1995). This formula reads as:

\[ \text{Ambivalence} = \frac{\text{positive} + \text{negative}}{2} - |\text{positive} - \text{negative}|. \]

A first advantage of this formula is that it captures both the similarity (i.e., the difference between the ratings on the positive and negative components should be small to get a high-ambivalence score) and the extremity (i.e., the sum of the scores on the positive and negative components should be high to get a high-ambivalence score) of the contradictory feelings toward the parent. A second advantage is that it has already been used effectively in previous studies on ambivalence (Fingerman, Chen, Hay, Cichy, & Lefkowitz, 2006; Ha & Ingersoll-Dayton, 2008; Willson, Shuey, & Elder, 2003). Moreover, an indirect approach may be more effective than directly asking respondents about their mixed feelings as individuals may have difficulty reporting such feelings (Birditt, Fingerman, & Zarit, 2010; Luescher & Pillemer, 1998).

The extent to which the respondent experiences *psychological ambivalence* toward the parent is calculated by applying the formula to capture ambivalence in the respondents’ answers to the items used for measuring affectional solidarity (see above) and conflict between the parent and adult child. The latter was based on the reports of the adult child regarding the amount of conflict in the past 3 months between him or her and the parent. The question was: “Have you had any conflicts, strains, or disagreements with your [father/mother] in the last 3 months?” Answer categories included 0 = not at all, 1 = once or twice, and 2 = several times. These answer categories were recoded so that both the positive and negative elements used in the formula ranged between 0 and 3. To avoid negative values, a constant of 1.5 was added to the original formula. The final measure for psychological ambivalence could range between 0 and 4.5.

Finally, the original, nonrecoded measure for the amount of conflict between the parent and adult child was used in our analysis to explore how solidarity and conflict are related.

Due to missing values, which were mostly caused by the respondent’s not returning the self-completion questionnaire in which the items on normative solidarity were included, the final number of parent–child relations in the analyses is 2,885. The average age of the adult children included in the final sample is 38.87 years, whereas parents are on average 68.30 years old. Both mothers (64.92%) and daughters (60.97%) are overrepresented in the final sample, with 39.27% of the relationships consisting of mother–daughter dyads and 13.38% of father–son dyads. The means and standard deviations of the solidarity, conflict, and ambivalence measures are presented in Table 1.

**Analyses**

To test our hypotheses, the data were analyzed by means of latent variable structural equation modeling (Kline, 2005) using LISREL 8.8. Because our data included categorical indicators, we used polychoric and polyserial correlation matrices as input matrices for LISREL (Jöreskog, 1990). For continuous variables, Pearson correlations were used. Besides categorical indicators, our data also included nonnormal distributions. To control for this, the models were estimated using diagonally weighted least squares estimation, instead of the default maximum likelihood estimation, which requires normally distributed data (Scientific Software International, 2009).

Model fit was assessed with the Satorra–Bentler scaled chi-square statistic (Satorra & Bentler, 1988), and the root mean square error of approximation (RMSEA) and comparative fit index (CFI) that are based on this Satorra–Bentler corrected chi-square, controlling for the nonnormality of the data (Jöreskog, 2004). The RMSEA calculates the standardized residuals that result from fitting a model to the
data; RMSEA values below .05 are considered an indication of good model fit, and values between .05 and .08 represent acceptable fit (Kline, 2005). For the CFI, values more than .95 indicate good model fit (Hu & Bentler, 1995, 1999; Kline, 2005). Because model chi-squares are sensitive to the size of the correlations and sample size, we also report the model’s chi-square divided by its degrees of freedom, resulting in the normed chi-square (NC). Values lower than 4.0 indicate a reasonable fit (Bollen, 1989; Kline, 2005). Finally, to be able to select among competing nonhierarchical models, the model with relatively better fit and fewer parameters, the Akaike information criterion (AIC) is reported. The model with the smallest AIC is chosen as the one most likely to replicate the data (Kline, 2005). Improvements of model fit between hierarchical or nested models were assessed using a chi-square difference test and reported in the text. Unlike the usual normal theory chi-square statistics, the difference between two Satorra–Bentler corrected chi-squares is not distributed as chi-square. Instead, the $T_s$ statistic (Satorra & Bentler, 2001) must be calculated, which is obtained by dividing the difference between the two maximum likelihood chi-square values by a difference test scaling correction (Geldhof, Selig, & McConnell, 2008; Muthén & Muthén, 2010).

We started our analyses by conducting an exploratory factor analysis on all solidarity dimensions for which multiple indicators were available. Results (available upon request) revealed that associational solidarity should be represented by two latent constructs, one representing face-to-face contact and one representing all other forms of contact. The items measuring the exchange of advice and interest (both given and received), which were originally grouped under functional solidarity, were found to load on the same factor as relationship quality (e.g., affectional solidarity), and will be used as indicators for the latent construct of affectional solidarity. For the remainder of the items measuring functional solidarity, it was revealed that a distinction should be made between giving and receiving help (with household tasks and odd jobs). Financial help was unrelated to any other measure for solidarity and was excluded from the two latent variables measuring functional solidarity. The latent constructs of normative and structural solidarity are measured as described previously in the data section. The measurement part now comprises seven latent variables at Wave 1 and Wave 2, each latent variable representing (parts of) a solidarity dimension.

**Results**

Our first model included only structural relations between the same latent variables measured at both waves (representing stability in the latent variables over time). In addition, covariances between the measurement errors of the same indicators at both waves are permitted. As can be seen in Table 2, this model showed a reasonable fit, with RMSEA and CFI statistics of, respectively, .042 and .972. However, the NC statistic ($\chi^2/df$) of 6.03 suggested that model fit was moderate at best. Therefore, a second model was estimated in which a number of measurement errors were allowed to correlate. These included those between giving and receiving advice, showing and receiving interest, giving and receiving help with housework, giving and receiving help with practical matters (because each pair of items measured the same form of help), giving advice and showing interest, and receiving advice and interest (because the help in both pairs of items was directed to the same person, and this distinction was not addressed in the latent construct of affectional solidarity). These measurement errors were allowed to correlate at both waves and between waves, adding up to a total of 24 correlated measurement errors. This model provided a significant improvement in fit over the first model ($\Delta \chi^2 (T_s) = 2,310.17, \Delta df = 24, p < .001$) and showed a good fit overall (RMSEA = .032, CFI = .985, $\chi^2/df$ (NC) = 3.94).

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**Table 1. Means and Standard Deviations (SD) of Manifest Variables (N = 2,885)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Wave 1</th>
<th>Wave 2</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face-to-face contact (log transformed)</td>
<td>3.488</td>
<td>3.466</td>
<td>0–5.71</td>
</tr>
<tr>
<td>Other forms of contact (log transformed)</td>
<td>3.517</td>
<td>3.468</td>
<td>0–5.71</td>
</tr>
<tr>
<td>Relationship quality</td>
<td>2.212</td>
<td>2.157</td>
<td>0–3</td>
</tr>
<tr>
<td>Showing interest—given by respondent</td>
<td>1.665</td>
<td>1.754</td>
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</tr>
<tr>
<td>Showing interest—given by family member</td>
<td>1.625</td>
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The Model of Intergenerational Solidarity

Given that the measurement part of the model was satisfactory with respect to model fit, we added the structural relations between the latent variables measuring the different dimensions of intergenerational solidarity. Compared with the previous model, this model provided a significant improvement in fit ($\Delta \chi^2 (T_p) = 217.63, \Delta df = 42, p < .001$) and showed a good overall fit (RMSEA = .030, CFI = .988, $\chi^2/df$ (NC) = 3.54). The path coefficients of this third model, representing the hypothesized effects in the solidarity model, are presented in Table 3. The solidarity dimensions at Wave 1 are presented in the rows, whereas the solidarity dimensions at Wave 2 are presented in the columns. Please be reminded that our models do not include covariates as we are mainly interested in testing the structural paths as hypothesized in the intergenerational solidarity model.

The first hypothesis stated that associational, affectional, and functional solidarity are mutually reinforcing dimensions. As can be seen from rows and columns one through five in Table 3, this hypothesis is largely supported. Both associational and affectional solidarity positively influence future levels of solidarity in other dimensions, although the influence of associational solidarity can be completely attributed to contact by phone, letter, or e-mail. For functional solidarity, the results are not entirely in line with the hypothesis. As can be expected, the amount of help provided was negatively related to previous levels of help received, and vice versa, the amount of help received was negatively related to previous levels of help provided. However, giving help was unexpectedly found to reduce future levels of affection and future levels of contact by phone, letter, or e-mail. A possible explanation for the negative effect of giving help on affection is that it reflects the burden felt when one has to give help to a parent, which may consequently reduce the positive feelings for the parent. The negative effect of giving help on contact by phone, letter, and e-mail may be caused by the fact that the different forms of contact are used as substitutes for each other. Thus, if face-to-face contact increases, this may decrease the amount of contact by phone, letter, or e-mail. As can be seen in Table 1, face-to-face contact indeed increases with previous levels of help given. Overall, we find strong support for the first hypothesis, with the note that the effects of receiving and giving help on contact by phone, letter, or e-mail, and affection are dissimilar, and the effects of and on face-to-face contact are minor.

In the sixth row of Table 3, the path coefficients reveal that none of the solidarity dimensions is significantly influenced by previous levels of normative solidarity, when controlling for the effects of the other solidarity dimensions at Wave 1. The second hypothesis, which posited a positive effect of normative solidarity on the other solidarity dimensions, is not confirmed.

The third hypothesis stipulated that the opportunity structure, here operationalized as the geographical distance between the respondent and his or her parent, will enable (or constrain) future levels of association and functional solidarity. Thus, we expect to find a negative effect of the structural solidarity dimension at Wave 1, on levels of association and patterns of exchange at Wave 2. As can be seen from the path coefficients in row 7 of Table 3, this hypothesis is supported. Both future levels of face-to-face contact and exchanges of help are negatively influenced by greater distances between the parent and child. Affection for the parent is not significantly influenced by distance, as expected. Also, contact by phone, letter, or e-mail is not affected.

Although we did not explicitly formulate a hypothesis on it, we found that neither normative nor structural solidarity are significantly influenced by previous levels of solidarity in the other dimensions. This is also implicitly suggested by Bengtson and Roberts (1991) in their discussion of the solidarity model. The only significant path coefficients are those that represent the influence from previous levels of normative and structural solidarity on future levels of the same dimensions of solidarity. Given the relatively high coefficients for these paths, especially for structural solidarity, these dimensions can be conceived as being relatively stable over time.

The Role of Ambivalence and Conflict

In the next model, psychological ambivalence is added. As the measure for psychological ambivalence is partly composed of a measure for affection, we removed the latent construct of affectional solidarity from this model. Because additional covariances were added (and others removed), this model was not nested into the previous model (i.e., non-hierarchical), and a chi-square difference test could not be computed. Instead the AIC was consulted. As can be seen in Table 2, all fit indices, including the AIC, suggested that the model that included a measure and latent variable for
### Table 3. Diagonally Weighted Least Squares Estimates of Structural Relations Between Solidarity Constructs (N = 2,885)

<table>
<thead>
<tr>
<th>Endogenous variables (t2)</th>
<th>Face-to-face contact</th>
<th>Other contact forms</th>
<th>Affectional solidarity</th>
<th>Functional solidarity</th>
<th>Receiving help</th>
<th>Giving help</th>
<th>Normative solidarity</th>
<th>Structural solidarity</th>
<th>Distance in km (log)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exogenous variables (t1)</strong></td>
<td><strong>B</strong></td>
<td><strong>β</strong></td>
<td><strong>B</strong></td>
<td><strong>β</strong></td>
<td><strong>B</strong></td>
<td><strong>β</strong></td>
<td><strong>B</strong></td>
<td><strong>β</strong></td>
<td><strong>B</strong></td>
</tr>
<tr>
<td>Associational solidarity (face-to-face contact)</td>
<td>.388*** (0.080)</td>
<td>.388</td>
<td>.034 (0.085)</td>
<td>.034</td>
<td>.027 (0.038)</td>
<td>.033</td>
<td>.013 (0.038)</td>
<td>.016</td>
<td>.007 (0.035)</td>
</tr>
<tr>
<td>Associational solidarity (other contact forms)</td>
<td>.048 (0.034)</td>
<td>.048</td>
<td>.300*** (0.064)</td>
<td>.300</td>
<td>.034* (0.015)</td>
<td>.042</td>
<td>.052** (0.019)</td>
<td>.066</td>
<td>.006 (0.017)</td>
</tr>
<tr>
<td>Affectional solidarity (receiving help)</td>
<td>.060 (0.057)</td>
<td>.060</td>
<td>.399*** (0.078)</td>
<td>.399</td>
<td>.743*** (0.071)</td>
<td>.728</td>
<td>.679*** (0.103)</td>
<td>.627</td>
<td>.240*** (0.080)</td>
</tr>
<tr>
<td>Functional solidarity (giving help)</td>
<td>.118 (0.066)</td>
<td>.118</td>
<td>.072 (0.070)</td>
<td>.072</td>
<td>.034 (0.066)</td>
<td>.036</td>
<td>.194** (0.074)</td>
<td>.168</td>
<td>.015 (0.079)</td>
</tr>
<tr>
<td>Functional solidarity (giving help)</td>
<td>.097* (0.043)</td>
<td>.097</td>
<td>.074</td>
<td>.074</td>
<td>.160*** (0.048)</td>
<td>.160</td>
<td>.568*** (0.049)</td>
<td>.531</td>
<td>.033 (0.087)</td>
</tr>
<tr>
<td>Normal solidarity (giving help)</td>
<td>.029 (0.017)</td>
<td>.029</td>
<td>.012 (0.019)</td>
<td>.012</td>
<td>.025 (0.015)</td>
<td>.025</td>
<td>.024 (0.025)</td>
<td>.024</td>
<td>.062*** (0.023)</td>
</tr>
<tr>
<td>Structural solidarity</td>
<td>-3.08*** (0.060)</td>
<td>-3.08</td>
<td>-0.015 (0.062)</td>
<td>-0.015</td>
<td>-0.015 (0.014)</td>
<td>-0.015</td>
<td>-0.040* (0.018)</td>
<td>-0.040</td>
<td>-0.103*** (0.025)</td>
</tr>
<tr>
<td>R²</td>
<td>.552</td>
<td>.336</td>
<td>.616</td>
<td>.552</td>
<td>.435</td>
<td>.375</td>
<td>.894*** (0.138)</td>
<td>.894</td>
<td>.838</td>
</tr>
</tbody>
</table>

Notes. Standard errors are in parentheses.

*p < .05. **p < .01. ***p < .001.
Table 4. Diagonally Weighted Least Squares Estimates of Structural Relations Between Solidarity Constructs and Psychological Ambivalence and Conflict (N = 2,885)

<table>
<thead>
<tr>
<th></th>
<th>Associational solidarity</th>
<th>Affectional solidarity</th>
<th>Functional solidarity</th>
<th>Normative solidarity</th>
<th>Structural solidarity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Face-to-face contact</td>
<td>Other contact forms</td>
<td>Receiving help</td>
<td>Giving help</td>
<td>Distance in km (log)</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>β</td>
<td>B</td>
<td>β</td>
<td>B</td>
</tr>
<tr>
<td>Exogenous (t1)</td>
<td>-0.039*</td>
<td>-0.039</td>
<td>0.018 (0.023)</td>
<td>0.018</td>
<td>NA</td>
</tr>
<tr>
<td>Endogenous (t2)</td>
<td>-0.076 (0.041)</td>
<td>-0.076</td>
<td>-0.015 (0.026)</td>
<td>-0.015</td>
<td>NA</td>
</tr>
<tr>
<td>Exogenous (t1)</td>
<td>-0.059*** (0.022)</td>
<td>-0.059</td>
<td>0.122*** (4.336)</td>
<td>0.122</td>
<td>0.053 (0.028)</td>
</tr>
<tr>
<td>Endogenous (t2)</td>
<td>-0.043 (0.048)</td>
<td>-0.043</td>
<td>0.027 (0.024)</td>
<td>0.027</td>
<td>0.017 (0.138)</td>
</tr>
</tbody>
</table>

Notes. Structural relations between solidarity dimensions included in the models, but not given in the table. Standard errors are printed in parentheses. NA = not applicable.

*The structural path between psychological ambivalence at Time 1 and Time 2 reads $B = .297, SE = 0.023, p < .001$ ($b = .297$).

**The structural path between conflict at Time 1 and Time 2 reads $B = .454, SE = 0.045, p < .001$ ($b = .454$).

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

SOLIDARITY AND AMBIVALENCE

In our study, we first assessed whether the structural relations among the dimensions distinguished in the model would be sufficient to account for the possible contradictions in family relations. We found that conflict only affected later affectional solidarity. Remarkably, no dimensions of solidarity predicted later conflict. Combined, these findings provide insights into the respective roles of intergenerational solidarity, affective solidarity, and functional solidarity.

Second, we investigated whether ambivalence catalyzes changes in family relations in the model of intergenerational solidarity. Our findings suggest that intergenerational solidarity is supported by longitudinal data instead of cross-sectional data. We found support for most of the hypotheses that we derived from the model.

Third, we tested Bengtson and colleagues’ suggestion that incorporating conflict into the model of intergenerational solidarity would be sufficient to account for the possible contradictions. Although our findings are consistent with this perspective, they also suggest that conflict is not necessarily detrimental to the quality of family life. We found that conflict only affected later affectional solidarity. Remarkably, no dimensions of solidarity predicted later conflict. Combined, these findings provide insights into the respective roles of intergenerational solidarity, affective solidarity, and functional solidarity.

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conflict, and ambivalence. Clearly, associational, affectional, and functional solidarity are highly interdependent core dimensions, whereas the dimensions of structural solidarity and conflict should rather be conceived as being exogenous to the other dimensions. This raises the question whether normative solidarity, structural solidarity, and conflict should be included in a model of intergenerational solidarity at all.

We are unaware of any previous studies longitudinally examining ambivalence as a potential catalyst of change in family relations. Although more empirical tests on intergenerational ambivalence using longitudinal data are needed to warrant more definitive statements, including ones that use validated measurements of sociological ambivalence, our findings do question Connidis’ and McMullin’s theoretical assumption that intergenerational ambivalence acts as a catalyst of change in intergenerational family relations. Although our empirical analyses do not directly capture any negotiating processes that might occur in psychologically ambivalent family relations, they do suggest that such processes are not likely to generate changes in the levels of contact, exchange of help, and/or affection in intergenerational family relations. Thus, we would not go along with Connidis’ and McMullin’s suggestion to consider the concept of ambivalence a suitable replacement for the intergenerational solidarity model as such. Ambivalence was not superior in explaining changes in intergenerational relationships compared with the original intergenerational solidarity model.

Some cautionary remarks regarding our study are in order here. First, although many of our path coefficients are significant, they are rather small in size. A first reason might be that by including the structural relations between the same solidarity dimensions measured at both waves in our analyses (the common procedure in structural equation modeling when using longitudinal panel data), large parts of the variance of the solidarity dimensions at Wave 2 are already explained. Consequently, the other solidarity dimensions can explain only the remainder of the variance, resulting in relatively small path coefficients. A second reason might be that the relative short time period between the two waves reduces the likelihood of large changes in the different solidarity dimensions. On the other hand, despite controlling for previous levels of solidarity and the relative short time span between the two waves, we still find significant effects among the solidarity dimensions.

A second limitation is that we base our conclusions on tests using single informant data (i.e., child’s perceptions only) from a large-scale longitudinal data set. Although this enables us to test the hypothesized effects within the solidarity model and of the concept of ambivalence, it is also a rather crude tool to do so. Employing qualitative methods and including the perspectives of both family members (e.g., Matthews, 2002; Matthews & Rosner, 1988) might be a better way to investigate ambivalent intergenerational relations and the negotiation processes that might be going on in such relationships. Related, while our, and most other research on solidarity and ambivalence has analyzed specific dyadic family relations, it can be questioned whether the concepts of solidarity and ambivalence should actually be conceived and studied as family characteristics. Incorporating a family-level view allows researchers to observe general “family climates” that influence the relationships between all members of one particular family (with variations in family relations existing mostly between families), while it also allows researchers to compare family relationships within one family, such as is done in studies employing data from the Within-Family Differences Study (e.g., Suitor, Pillemer, & Sechrist, 2006). Indeed, our finding that normative solidarity did not significantly influence future levels of solidarity in the other dimensions might actually be an artifact of how we constructed our measure, basing it entirely on the attitudes of only one family member, thus possibly failing to capture some sort of “family climate.”

With regard to the low levels of ambivalence found in our study, a few remarks are in order. Although the average level of ambivalence experienced in our sample is similar to that of other recent studies on intergenerational ambivalence (Fingerman et al., 2006; Ha & Ingersoll-Dayton, 2008; Lowenstein, 2007), their low values raise the question whether respondents who experience ambivalence are less likely to participate in research such as ours. Other explanations may be that ambivalence is simply not as widespread as is often argued, or that a direct measure would have resulted in higher scores of ambivalence, despite the fact that some authors suggest the opposite (e.g., Birditt et al., 2010). In either case, readers should be careful generalizing our conclusions to the general population; it could be that ambivalence does affect future levels of help exchange or affection but only so in extreme cases where high levels of ambivalence are experienced. Future research might focus especially on respondents experiencing high levels of ambivalence to study whether the mechanisms that are believed to be associated with ambivalence, for instance, by using a qualitative approach: Deeper insight might thus be gained into the mechanisms that are possibly associated with ambivalence among the more extreme cases.

Finally, we should note that in our test of the model of intergenerational solidarity, we omitted one dimension: consensual solidarity. Unfortunately, the data set employed in the current study did not include any measures of perceived value similarity. An alternative possibility would have been to construct a more objective measure for consensual solidarity by using the congruence between parents’ and children’s separate reports of their values, but it has been theoretically argued (Sechrist, Suitor, Vargas, & Pillemer, 2011) as well as empirically shown (e.g., Roberts & Bengtson, 1990; Suitor et al., 2006; Suitor, Sechrist, & Pillemer, 2007) that perceived similarity of values, and not value similarity as measured by the congruence between parents’ and children’s separate reports, affects other characteristics of relationships. Future research might explore how ambivalence...
and consensual solidarity are related to each other and how the inclusion of both characteristics affects the relations among the other solidarity dimensions.

By using longitudinal panel data, our study has demonstrated the viability of the original model of intergenerational solidarity as developed by Bengtson and his colleagues. We conclude that contact, affection, and support exchange are core dimensions of the concept of intergenerational family solidarity, whereas conflict and geographical distance should rather be conceived as exogenous variables, and normative solidarity being unrelated to it. Intergenerational ambivalence was found to be apparent in intergenerational relations, and to be influenced by previous levels of solidarity, but failed to show its hypothesized potential to alter family relations. The concept of ambivalence, which so far has served as an important theoretical impetus for advancing research on solidarity, has not yet led to empirical results that seriously question the model of intergenerational solidarity as a main explanatory framework of solidarity between adult children and their parents.

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