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Chapter 4

OLDER PARENTS PROVIDING CHILD CARE FOR ADULT CHILDREN: DOES IT PAY OFF?¹

Abstract This study examines whether past grandparental child care is related to present support from adult children. Based on social exchange theory, we expect that grandparental child care creates a debt that is repaid in the form of receiving support later in life. Using data from the Longitudinal Aging Study Amsterdam ($N = 349$ parents; $N = 812$ adult children), we find that grandparents who frequently provided child care for sons in the past more often received instrumental and emotional support from these sons approximately 13 years later than grandparents who less frequently provided child care. Investments in daughters did not pay off. Instrumental support other than child-care provision did not predict receiving support from either sons or daughters, but emotional support did. These results support the notion of long-term reciprocity in parent-child relationships, but its importance depends on the child's gender and the type of earlier investment.

¹This chapter is co-authored by Anne-Rigt Poortman (Department of Sociology/ ICS, Utrecht University), and Theo van Tilburg (Department of Sociology, VU University Amsterdam), and is published in the *Journal of Marriage and Family* in 2012. The study is based on data collected in the context of the "Living arrangements and social networks of older adults" and "Longitudinal Aging Study Amsterdam" research programs. These programs are conducted at VU University in Amsterdam, and supported predominantly by the Ministry of Health, Welfare, and Sports, Directorate of Long-Term Care.

Introduction

Research has consistently demonstrated that adult children are important support providers for older adults (Hogan, Eggebeen, & Clogg, 1993). Previous research has examined the constraints that these adult children face in providing support for their parents by studying the obstacles of competing responsibilities such as work obligations, commitments to their own families, and geographical proximity (Mulder & Van der Meer, 2009). Attention has also been given to the role of norms (Killian & Ganong, 2002; Klein Ikkink, Van Tilburg, & Knipscheer, 1999; Silverstein, Gans, & Yang, 2006;) religion (Gans, Silverstein, & Lowenstein, 2009), family structure (Bengtson, 2001), and the consequences of support sources other than children (Uhlenberg, 2009).

The influences of earlier support exchanges on the present support have rarely been considered because longitudinal data are scarce (Parrott & Bengtson, 1999), but the idea that parents invest in their children earlier in life by giving them support in order to receive their children's assistance in later years is prominent in research on intergenerational support (Antonucci & Jackson, 1989; Silverstein, Conroy, Wang, Giarrusso, & Bengtson, 2002; Uehara, 1995). The few studies that have been conducted support this idea: older adults who transferred money, sentiment, or time in the past were more likely to receive support later in life than older adults who did not transfer these types of support (Parrott & Bengtson, 1999; Silverstein et al., 2002).

According to Friedman, Hechter, and Kreager (2008), past support in the form of child care for grandchildren may be one of the most important deter-

minants for future support from adult children. No empirical study has yet tested the idea that grandparental child-care provision induces future support receipts. Drawing on social exchange theory and the concept of reciprocity, the current study examines whether grandparental child-care provision in the past is related to current support from adult children using longitudinal data in which child-care provision was measured in 1992 and support received from adult children was measured 7 to 17 years later.

Child-Care Provision as a Long-Term Investment

Different theories exist to understand why children support parents, the most important being social exchange theory (Homans, 1958), theories emphasizing the role of norms of filial obligations (i.e., children ought to support their parents; Rossi & Rossi, 1990) and theories emphasizing altruism (i.e., unselfish support because children care about their parents; Logan & Spitze, 1995). To understand the role of earlier support for future support, we focus on social exchange theory. Social exchange theory is based on the idea that the exchange of social and material support is an essential part of human interaction (Homans, 1958). People in an exchange relationship provide and receive support. Exchange that takes place more or less at the same time is commonly referred to as immediate exchange. For instance, grandparents may provide child care for their children and receive money or appreciation in return. An exchange in which provided support is returned over an extended period of time is commonly referred to as deferred exchange (Lévi-Strauss, 1969), life-course reciprocity (Antonucci & Jackson, 1989), time-delayed reciprocity (Uehara, 1995), or long-term reciprocity (Silverstein et al., 2002).

Long-term reciprocity is assumed to be guided by the norm of reciprocity (Uehara, 1995). To avoid shame, guilt, or damage to reputation (Greenberg, 1980), the norm of reciprocity prescribes that “what one party receives from the other require[s] some return” (Gouldner, 1960, p. 169). An ongoing imbalance in either giving or receiving leads to dissatisfaction with one’s relationship and may lead to discontinuation of the relationship when dissatisfaction goes beyond a certain threshold. Close relationships withstand long-term imbalance better than peripheral relationships (Klein Ikkink & Van Tilburg, 1999). That is, reciprocity within close relationships does not always need to

be reinforced by norms. It can be self-perpetuating because of the re-occurring exchanges of support over time (Gouldner, 1960). Parent-child relationships are usually close relationships characterized by ongoing exchanges of support that are imbalanced at various stages in the life course. Early in their life course, parents often transfer more support to their children than they receive back. This flow is often reversed later in the life course when parents age and children transfer back more support than they receive. To understand this imbalance at various stages in the life course, scholars developed the idea of a “support bank” (Antonucci & Jackson, 1989) and the concept of “social capital” (Coleman, 1988) to highlight the idea that parents can store support in the parent-child relationship that can be tapped in times of need.

The extent to which parents can store support in the intergenerational relationship presumably differs for sons and daughters. Sons are more likely to evaluate received support as a long-term investment than daughters. Daughters are socialized to be kin-keepers, which means that they are said to have the primary responsibility for holding the family together, making them more involved in family relationships (Dubas, 2001). Characterized by self-perpetuating reciprocity rather than reciprocity reinforced by norms, support exchange within parent-daughter relationships is presumably less evaluated in terms of investments than support exchange within parent-son relationships. That is, support received by daughters is more part of a continuous process of immediate exchanges rather than long-term reciprocity that needs to be reinforced by norms. Although empirical evidence about gender differences in long-term reciprocity is far from conclusive, several studies support the idea that men and women differ in the extent to which the norm of reciprocity plays a role. Parrott and Bengtson (1999) for instance observed that fathers in need of support were more likely to reciprocate the received support in order to balance the relationship than mothers. Targeting sons with support in order to compel future reciprocity may therefore be a more effective strategy than targeting daughters.

Parents can target their children with various types of support early in the life course to compel future reciprocity. Grandparental child-care provision may be the most effective investment for two reasons. First, as time beyond working hours is often a luxury commodity, in particular for dual income parents, grandparental child-care provision is presumably of higher value than

financial support or emotional support. In particular, parents generally find child-care provision from their parents more convenient, more beneficial to their child, more trustworthy, and less expensive than care from other child minders (Fergusson, Maughan, & Golding, 2008). Furthermore, it enables women to be employed outside of the house because it eases reconciliation of child care with work. Second, grandparental child care is presumably remembered for a longer period of time than investments like helping with the daily chores in and around the house.

Support received from adult children may take many forms but is commonly classified into emotional and instrumental support (Veiel, 1985). Emotional support includes advice, words of encouragement, compliments, attention, and sympathy. Instrumental support involves services such as help with household chores, transportation, and cooking. We hypothesize that the more often parents provided child care to their grandchildren in the past, the more often they receive instrumental and emotional support from their children in later years. In addition, we hypothesize that child-care provision for sons is more likely to be reciprocated than child-care provision for daughters. Because investments other than child care are also expected to increase social capital within the parent-child relationship, we include emotional support received by children in the past and instrumental support that is different from child-care provision (Parrott & Bengtson, 1999; Silverstein et al., 2002).

Support received from adult children is affected by the parent's need for support from children and the child's opportunities to provide this support. We therefore included parents' functional capacities and age as indicators for support need (Klein Ikkink, Van Tilburg, & Knipscheer, 1999). Because the parent's partner is often the first in order of preferred support providers and children are second, we included whether a parent has a coresiding partner or not. In addition, we included parent's income level to account for the opportunities to afford support from other sources than the children. We also account for the parent's gender (Klein Ikkink, Van Tilburg, & Knipscheer, 1999). For children, we account for opportunities to provide support by including their age, employment status, and travel time to the parent in our analysis. Finally, because the time between the first observation and eligible follow-up observation varies per grandparent, we account for the elapsed time between the observations.

Method

Respondents

In 1992, the Living Arrangements and Social Networks research program (Knipscheer, De Jong Gierveld, Van Tilburg, & Dykstra, 1995) interviewed 3,805 older adults from the birth cohorts 1908 - 1937 taken from the population registers of eleven Dutch municipalities. The interview was computer assisted. Due to time restraints, the computer randomly selected 827 parents with grandchildren who were asked about their grandchild's gender, age, coresidence, and frequency of child-care provision in the year preceding the interview. This T_0 observation was followed up by six observations conducted between 1992 and 2009 for the Longitudinal Aging Study Amsterdam (Huisman et al., 2011). These follow-ups included information about support exchanges between parents and adult children.

We selected four of the six available follow-ups to assess the parents' support receipts from adult children and other time-varying characteristics. Data from the first (T_1 : 1992 - 1993) and second follow-ups (T_2 : 1995 - 1996) were not analyzed because the time interval with T_0 (maximum of 4 years) was too short to be able to capture long-term reciprocity. These follow-ups presumably include parents who were still investing by means of child-care provision and who were unlikely to be in need of support from their children. The subsequent follow-ups, T_3 (1998 - 1999), T_4 (2001 - 2002), T_5 (2005 - 2006), and T_6 (2008 - 2009), allowed us to examine whether child-care provision at T_0 is reciprocated at a later time (between 7 and 17 years later). We gave preference to the information from the T_6 follow-up to maximize the time between the observations: this yielded the highest likelihood that the parents were in need of support because of older age and worse health. To increase the sample size, we analyzed information from a preceding interview if the parents from T_0 were not interviewed at the T_6 follow-up. We repeated this step-back selection procedure until follow-up T_3 was reached and included. At follow-up T_3 , 180 parents that were selected at T_0 had died (22%; $N = 827$); another 22 parents had died by T_4 (3%), 11 by T_5 (1%), and 7 by T_6 (1%). Some T_0 parents refused further participation: 94 at follow-ups T_1 , T_2 , or T_3 (11%); 5 at T_4 (1%); 3 at T_5 (<1%); and 1 at T_6 (<1%). Furthermore, a total of 18 parents (2%) were lost for follow-up measurement because they could not be contacted, and 59 more

were lost due to severe health problems (7%).

From the 827 parents that were selected at T_0 , we first excluded parents for whom we had no information at one of the eligible follow-ups ($n = 400$; 48%). Second, we excluded parents whose grandchildren were all older than 12 years at T_0 ($n = 69$; 8%) because child care is generally not needed for older grandchildren. Finally, parents were excluded when all adult children had died at the eligible follow-up observation ($n = 9$; <1%). Because parents by definition cannot invest in childless children by means of child-care provision, we excluded 409 childless children. The final sample consisted of 349 parents and 812 adult children. All of these parents had at least one grandchild aged 12 years or younger from at least one child at T_0 . Among the 812 adult children, however, there were 165 adult children with only children older than 12. These 165 adult children are included in our analysis in a separate category. The mean time that had elapsed between T_0 and the eligible follow-up was 12.7 years ($SD = 4.0$). Over time, the sample shifted toward a higher percentage of mothers (from 52% at T_3 to 69% at T_6) and toward parents who had been younger at T_0 : from an average of 71 years of age to an average of 63 years of age. Information about parents' support receipts was assessed for 46% of the parents at T_6 , 13% at T_5 , 25% at T_4 , and 16% at T_3 .

Measures

Instrumental and emotional support received from children. Information on instrumental and emotional support received from children was only available for children who were identified in the parent's personal network and were among the ten persons in the personal network most frequently contacted. For this network identification, respondents were asked to identify members of their network by name (Van Tilburg, 1998). The following question was posed: "Name the people with whom you have frequent contact and who are important to you." For the ten network members with the highest frequency of contact, the following question was asked at each follow-up to assess instrumental support received from each adult child: "How often did it occur in the last year that . . . helped you with daily chores in and around the house, such as preparing meals, cleaning the house, providing transportation, assisting with small repairs, or filling in forms?" For received emotional support, the

question was, “How often in the past year did you tell . . . about your personal experiences and feelings?” The answer categories were 0 = *never*, 1 = *seldom*, 2 = *sometimes*, and 3 = *often*. For children not identified in the network (10%) or not belonging to the ten network members contacted most frequently (14%), we assigned the value zero assuming that they never or rarely provided support to their parents in the year preceding the interview.

To evaluate the similarity of the three groups composing the ‘never support’ category in the analysis (i.e., never provided support, not identified in the network, not among the ten network members with the highest contact frequency), we analyzed the frequency of contact that was available for all children. Ranging from 1 = *never* to 8 = *daily*, children not identified in the network had a significantly lower mean on the contact frequency scale (i.e., 5.1) than those who never provided instrumental (mean = 6.0; $t_{(240)} = 4.2$; $p < .001$) or emotional support (mean = 5.8; $t_{(137)} = 2.45$; $p < .01$). Likewise, children who were not among the ten network members most frequently contacted had a significantly lower mean (i.e., 5.3) than those who never provided instrumental (mean = 6.0; $t_{(277)} = 4.20$; $p < .001$) or emotional support (mean = 5.8; $t_{(174)} = 2.34$; $p < .05$). This finding supports our assumption that support is presumably never or rarely received from children who were not among the ten network members frequently contacted or who were not identified as network members.

Past child-care provision to children. At T_0 , the parents provided the names of all of their children and grandchildren. The frequency of child-care provision for each grandchild was assessed by asking, “How often did you take care of . . . in the past twelve months?” The four possible answers were 0 = *never*, 1 = *seldom*, 2 = *sometimes*, and 3 = *often*. Grandparental child-care provision did not vary at all among grandchildren from a specific child, that is, grandparental child-care provision generally involved all grandchildren within a household. We created a variable indicating for each adult child whether they had eligible children but *never received child-care support* (34%), *seldom received child-care support* (8%), *sometimes received child-care support* (22%), or *often received child-care support* (17%) in the year preceding the interview. For adult children with only children older than 12 years, we had no information on the amount of child-care provision in earlier years. We included their situation as a specific category. The resulting variable served as the independent variable

to examine our hypothesis that predicts support from children in later life from past child-care provision.

Control variables. We included instrumental and emotional support provided by parents and received by children at T_0 . This information was obtained by a procedure identical to the one used for the dependent variable, except that the direction of the support exchange was reversed. We also controlled for several characteristics of parents that are known to affect receipt of support: gender (Michalski & Shackelford, 2005), age, having a coresiding partner (vs. no coresiding partner) (“Are you currently living with someone whom you consider to be a partner?”), income (“Will you please tell me what category applies to your net income?”), and functional capacities (measured by a six-item Activities of Daily Living scale; Katz, Ford, Moskowitz, Jackson, & Jaffe, 1963, reliability = .79). We also controlled for the child’s age (“In what year was . . . born?”), employment status (“Does . . . have a job?”), and travel time between parent and child (“How long does it take you to travel to . . . by means of the way you usually travel?”). Finally, we included a variable reflecting the time between T_0 and the follow-up observation. All time-dependent characteristics of parents and children were measured at the selected follow-up observation.

Procedure

The data were hierarchically structured with children nested within parents. We therefore conducted a multilevel, ordinal logistic regression analysis by which differences between families and dependence of the observations within families are captured in separate error terms. We distinguished a child level (Level 1) and a parent level (Level 2). The ordinal regression method generates an equation for each step in the ordinal dependent variable. The parameters from the equations are simultaneously estimated and the obtained coefficients are constrained via so-called cut-points. The coefficients are thereby equal among the equations. Note that the dependent variable is at the level of the children, which means that the regression analyses reflect support provision by children rather than support receipts by parents. More specifically, the likelihood that children provide support to their parents is estimated, not the likelihood that parents receive support from their children. But it should be

mentioned that these two perspectives are closely related.

We used the `gllamm` command (Rabe-Hesketh, Skrondal, & Pickles, 2004) available in STATA to regress instrumental and emotional support received from sons and daughters. The analyses involved four models: instrumental support by daughters, instrumental support by sons, emotional support by daughters, and emotional support by sons. Iterative generalized least squares method was used to estimate parents' support receipts, and logit was used as the link function. Using step-back modeling, the four final models include only predictor variables that were significantly related to support ($p < .05$). The variable child-care provision, however, was never dropped because this is our central independent variable. Descriptive statistics of the variables included in our final models of the regression analyses are shown in Table 1.

The unstandardized coefficients of the regression models reflect how one unit change in a predictor variable renders it more likely to be in one of the higher support categories (more support) than its reference group (less support). To understand what the estimated coefficients mean, we calculated from the final models the percentages of often instrumental and emotional support provision for two groups of children: daughters and sons to whom parents had often provided child care ($n_{\text{daughters}} = 119$; $n_{\text{sons}} = 154$) and daughters and sons to whom parents had never provided child care ($n_{\text{daughters}} = 81$; $n_{\text{sons}} = 55$).

Results

We first describe how often daughters and sons provided instrumental and emotional support to their parents and how often parents provided child care earlier in the life course. For this description, we recalculated the proportions that were reported in Table 1 into percentages. For instrumental support, we observed that approximately 25% of daughters and 15% of sons often provided this type of support to their parents. The percentages of children who sometimes provided instrumental support were approximately equal for daughters (21%) and sons (20%). Few adult children seldom provided instrumental support to parents, that is, 16% of daughters and 13% of sons. Parents did not receive any instrumental support from 38% of daughters and 51% of sons. Compared to instrumental support, the figures for emotional support indi-

Table 1 *Description of Parents' (N = 349) and Adult Children's (N = 812) Characteristics in 1992 (T₀) and at the Follow-Up Observation That Were Included in the Final Regression Model*

Variables	Daughters (n = 429) parents (n = 260)		Sons (n = 383) parents (n = 232)		Min ^a	Max ^a
	Mean or proportion	SD	Mean or proportion	SD		
Parent's characteristics						
Age at follow-up	80.44	6.35	81.14	6.48	64 (65)	95
Functional capacities at follow-up	24.73	5.25	24.23	5.41	9(8)	30
Adult child's characteristics						
Travel time at follow-up	3.08	1.05	3.18	1.17	0	7
Instrumental support from child at follow-up						
Never	.38	.49	.51	.50	0	1
Seldom	.16	.37	.13	.34	0	1
Sometimes	.21	.41	.20	.40	0	1
Often	.25	.43	.15	.36	0	1
Emotional support from child at follow-up						
Never	.24	.43	.40	.49	0	1
Seldom	.11	.31	.14	.35	0	1
Sometimes	.29	.45	.27	.44	0	1
Often	.36	.48	.19	.40	0	1
Emotional support from parent at T₀						
Never	.33	.47	.46	.50	0	1
Seldom	.11	.32	.09	.28	0	1
Sometimes	.29	.46	.24	.43	0	1
Often	.27	.44	.21	.41	0	1
Child-care provision at T₀						
Unknown (all grandchildren > 12 years)	.22	.42	.18	.38	0	1
Never	.28	.45	.40	.49	0	1
Seldom	.07	.26	.08	.28	0	1
Sometimes	.24	.43	.19	.39	0	1
Often	.19	.39	.14	.35	0	1

Note: Child-care provision, emotional support from parent at T₀, and time invariant characteristics such as gender were measured in 1992; all other characteristics were measured at follow-up.

^a Values for daughters - parents relationships are included between brackets when they deviated from sons-parents relationships values.

cate that children more frequently provided this type of support. We observed that 36% of daughters and 19% of sons often provided emotional support to their parents. More than a quarter of the daughters (29%) and sons (27%) sometimes provided emotional support. There were only a few daughters and sons who seldom provided this type of support (11% and 14%, respectively), and approximately 25% of daughters and 40% of sons had never provided emotional support in the year preceding the interview. Regarding child-care provision, we observed that 43% of daughters and approximately 33% of sons sometimes or often received child care from their parents in the year preceding the interview in 1992. Child-care status was not known for one out of five adult children because the interview did not include a retrospective question about child-care provision at a younger age for grandchildren older than 12 years.

We now turn to the results of the regression models (Table 2). All models were a significant improvement over the empty model as indicated by the delta log likelihood. Regarding instrumental support (left panel of Table 2), the model predicting daughters' support provision indicates that its likelihood is statistically not related to past child-care receipts. Although the unstandardized estimates for seldom, sometimes, and often child-care support receipts were positive in reference to the never child-care category, none of these estimates were statistically significant. For sons, however, instrumental support was more often given when child-care provision had been more frequent, as indicated by the increase in the unstandardized coefficients from 0.27 for seldom child-care receipts to 0.78 for often child-care receipts. Sons who sometimes or often received child-care provision in the past provided more often instrumental support than sons who received less child-care provision. The unstandardized coefficient for sons with unknown child-care provision intensity is 0.10.

To facilitate the interpretation of the estimated unstandardized coefficients, we present in Figure 1 the percentages of daughters and sons who often provided support to their parents compared to the amounts of child-care provision that they had received from their parents. The differences in percentages shown in the left panel of Figure 1 demonstrate in detail that child-care provision by parents increases the likelihood that sons often provided instrumental support later in life. For example, we observed that 11% of the

Table 2 Ordinal Logit Two-Level Regression Estimates for Instrumental and Emotional Support received From Daughters (429 Daughters with 260 Parents) and From Sons (383 Sons with 232 Parents)

	Instrumental support (0 - 3)						Emotional support (0 - 3)					
	Daughters-parents			Sons-parents			Daughters-parents			Sons-parents		
	B	SE		B	SE		B	SE		B	SE	
Parent's characteristics												
Age at followup (64 - 95)	0.11	0.02	***	0.05	0.02	*	0.05	0.03	*	0.05	0.02	*
Functional capacities at follow-up (8 - 30)				-0.07	0.03	**						
Adult child's characteristics												
Travel time at follow-up (0 - 7)	-0.87	0.14	***	-0.39	0.11	***						
Emotional support from grandparent at T ₀ (ref. never)												
Seldom	0.98	0.44	**	0.86	0.43	*	-0.07	0.45		0.77	0.46	
Sometimes	0.41	0.32		0.50	0.43		1.17	0.35	**	1.55	0.35	***
Often	0.95	0.33	**	0.75	0.32	*	1.39	0.36	***	1.79	0.38	***
Child-care status at T ₀ (ref. never child care)												
Unknown (all grandchildren > 12 years)	-0.12	0.34		0.10	0.34		-0.74	0.36	*	0.45	0.36	
Seldom	0.29	0.46		0.27	0.43		0.06	0.48		0.71	0.46	
Sometimes	0.12	0.34		0.73	0.33	*	0.57	0.35		0.26	0.36	
Often	0.32	0.37		0.78	0.38	*	0.64	0.39		1.24	0.39	***
Variance at grandparent level	1.62	0.68		0.90	0.55		2.19	0.76		1.75	0.70	
Delta Log Likelihood	44.02			23.67			23.32			26.59		

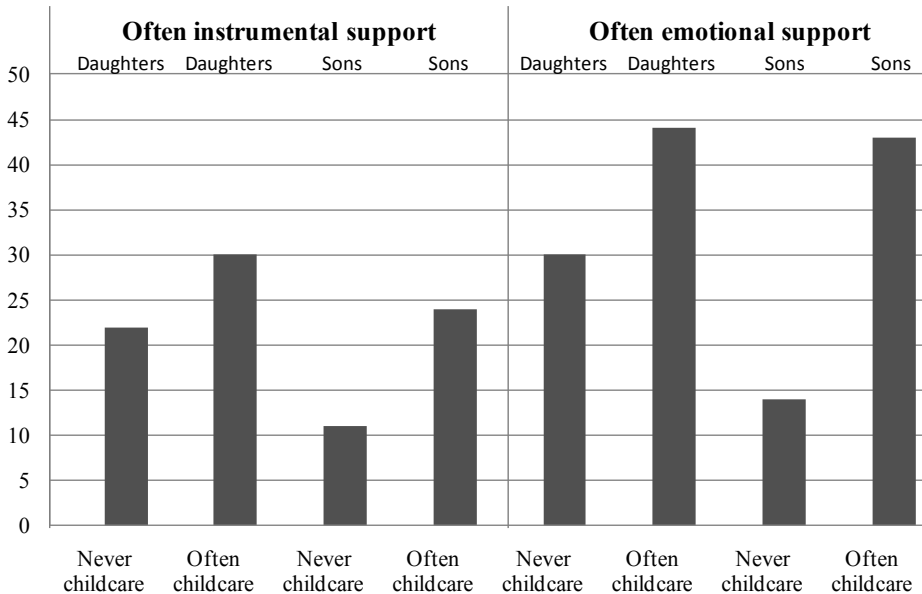
Note: Wald-tests were used for statistical significance; only statistically significant variables ($p < .05$) are included in these final models. Cut-points are not reported because the stepwise modeling procedure does not allow comparison between models.

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

sons often provided instrumental support when their parents had never provided child care in contrast to 24% of sons whose parents had often provided child care. A similar, slightly smaller, difference in percentage was observed for daughters. It should be noted, however, that the difference for daughters was statistically nonsignificant in the regression model.

The estimates for emotional support at T_0 (left panel of Table 2) further indicate that children were more likely to provide instrumental support to parents when they had received more emotional support from their parents in the past. The T_0 indicator for instrumental support received other than child-care provision was excluded from the models due to statistical nonsignificance, suggesting that child-care provision is more important for long-term reciprocity than help with daily chores in and around the house. The estimate for grandparents' ages in the models for daughters and sons furthermore indi-

Figure 1 Percentage of daughters and sons who often provide instrumental and emotional support grouped into those who often received child care ($n_{daughters} = 119$; $n_{sons} = 154$) and those who never received child care ($n_{daughters} = 81$; $n_{sons} = 55$)^a



Note: The percentages pertain to children providing support and not parents receiving support.

^a Differences are statistically significant for sons only.

cates that older parents received instrumental support more often from their children than do younger parents. This finding presumably reflects a higher need for support when parents age. The indicator for parents' functional capacities for instrumental support provided by daughters was excluded in the final model due to statistical nonsignificance. Sons whose parents had poor functional capacities were more likely to provide instrumental support than did sons whose parents had good capacities, indicating a greater dependency on sons when older adults have difficulties with performing activities of daily living. The parents' income, gender, and partner status were excluded from both final models (pertaining to instrumental support from daughters and sons). The results further indicate that daughters and sons were less likely to provide instrumental support when travel time between parent and child was greater. Employment status and age of children were not related to parents' instrumental support receipts.

For emotional support (right panel of Table 2), we again observed that child-care provision in the past was statistically significantly related to current support intensity from sons but not from daughters. In the model for daughters, the unstandardized coefficient for child care provided often is 0.64 compared with the reference group of parents never providing child care, with smaller estimates for intermediate frequencies of providing child care. Because these estimates were statistically not significant, there is, at best, weak evidence that emotional support is more often provided by daughters when parental child-care provision had been more intense in the past. Sons whose parents often provided child care in the past were significantly more likely to have provided emotional support to their parents later in life than sons with parents who provided child care less than often (or when child-care provision was unknown). The percentages for often emotional support provision by various levels of parental child-care provision are shown in Figure 1 and display a similar pattern as for instrumental support. The likelihood of children providing emotional support was however higher when compared to providing instrumental support.

Table 2 further shows that higher levels of past emotional support provided to children increased the likelihood of receiving emotional support from children at the follow-up: the unstandardized coefficient increases from -0.07 to 1.39 for daughters and from 0.77 to 1.79 for sons when emotional support

intensity at T_0 increases from seldom to often. Therefore, emotional support provided to a specific adult child at T_0 is a significant and strong predictor for intensity of emotional support received from this child many years later. The giving of parental instrumental support at T_0 was not related to emotional support received at the follow-up observation and, therefore, was not included in the final models and Table 2.

The models for emotional support further suggest that adult children were more likely to provide emotional support to older parents than younger ones. Other characteristics of parents (i.e., their income level, functional capacities, and partner status) did not affect the frequency with which their children provided emotional support. As to the other children's characteristics, none of them were statistically significantly related to emotional support. Presumably, geographical proximity is not important for emotional support; this type of support does not require face-to-face contact and is easily exchanged, for instance, via telephone or email. Children's age and employment status were not related to the likelihood of emotional support provision.

Discussion

This study examined whether support from adult children provided to their aging parents is related to the provision of child care by the parents to their grandchildren in the past. Our work contributes to earlier studies about support exchanges between children and parents, as it is the first study to empirically address the role of past grandparental child-care provision for support receipts in later life. Moreover, whereas most previous studies about earlier support exchanges between parents and children used a cross-sectional design (e.g., Whitbeck, Hoyt, & Huck, 1994), we studied the role of grandparental child care with longitudinal data spanning, on average, 13 years between child-care provision and support receipts. Also, unlike most prior studies focusing on one specific child or grandchild (e.g., Michalski & Shackelford, 2005; Shuey & Hardy, 2003), we were able to include information for almost all the parents' children and grandchildren.

Our study indicates that parents are more likely to receive support from their sons when they had often taken care of their children in the past. Earlier investments by means of child-care provision to daughters did not increase

the likelihood of receiving support from these daughters. These findings suggest that grandparental child-care provision is an important investment, but only when invested in sons, as it contributes to receiving support in later life. According to social exchange theory, child-care provision thus creates a debt with sons leading to reciprocation later in life in order to restore the cost-benefit balance within the relationship.

The nonsignificance of grandparental child care to daughters for future support suggests that long-term reciprocity does not play a key role in the support provision from daughters to parents. The absence of long-term reciprocity as a guiding principle suggests that support exchanges between parents and daughters may be characterized by an ongoing process of immediate support exchanges rather than long-term reciprocity. Also, theories other than social exchange may explain support by daughters, such as theories about filial obligations and altruism. That is, daughters provide support because they are expected to do so because of culturally defined gendered obligations (Rossi & Rossi, 1990; Klein Ikkink, Van Tilburg, & Knipscheer, 1999) or because of a general concern about the well-being of their parents (Logan & Spitze, 1995). Both perspectives imply that earlier support exchanges do not play a role for the support given by children to their aging parents.

Grandparental child-care provision in the past for sons was observed to be reciprocated only when it was provided sometimes or often, that is, on a regular basis. In these cases, child-care provision was being reciprocated not only by receipt of instrumental support, but also in the form of emotional support ('type crosswise reciprocity'; Thomése, Van Tilburg, Broese van Groenou, & Knipscheer, 2005). Moreover, instrumental support other than child-care provision (e.g., helping with daily chores) given by the parent in the past did not increase the likelihood of support given by sons. These findings fit with the hypothesis (Friedman, Hechter, and Kreager, 2008) that grandparental child-care provision can be one of the most effective investments for the induction of future support because of its high value and the lasting effect of child-care provision as an investment.

The current study further showed that emotional support given in the past induced receipts of instrumental and emotional support between 7 and 17 years later. These findings are consistent with results from the study of Silverstein et al. (2002), which showed that more affection in the past leads to

greater support in the present. The significance of past emotional support in parent–child relationships points at the importance of affectionate feelings in support relationships between parents and children. People in an ongoing exchange relationship realize mutual dependence (Gouldner, 1960) and regularly inform each other about their personal experiences and feelings because they are concerned about each other’s well-being. Such feelings are likely to arise in relationships that are characterized by a history of regular support exchanges (Stark & Falk, 1998), such as the parent–child relationship. Following Silverstein et al. (2002, p. S12), the observation that more emotional support provided to children in the past increases present support receipts from children might be understood by an “implicit social contract that ensures long-term reciprocity.” This contract reinforces exchange of support at various stages in the life course, including both tit-for-tat and long-term exchanges. Child-care provision could be part of this social contract.

It is important to remark that we did not limit our study to parents who were in need of support because of impairment. The study focused on the receipt of emotional and instrumental support in the form of occasional help rather than within the context of a long-term care relationship. It therefore provided a more general view on support received from children. Long-term care is dictated by parents’ needs whereas occasional help is generally given sporadically when a child has the opportunity (Brandt, Haberkern, & Szydlik, 2009). Children may also feel obliged to provide care rather than calling upon formal arrangements (Roberto & Jarrott, 2008). Because of the more voluntary character of occasional help, this type of support is presumably better understood as the repayment of earlier investments than as caring for parents in the long term. In addition, it is important to note that our study drew on data that included measures with a limited time frame. As such, children could have received child care preceding or following our measurements in 1992 and children could have reciprocated before or after the measurement of support receipts. The consequence of not having information about the other years presumably means that the effects of child-care provision are underestimated. Future researchers might want to include measures using a longer time frame, as this would presumably yield a more precise prediction of support receipts. Furthermore, future research could also include information about support exchanges from all children; for the current study we had to assume

for several children that they did not provide support to their parents.

Our study has advanced our understanding of support exchanges in intergenerational relationships in an aging Western society. It is well known that children are an important source of support receipts by parents, thereby contributing to their aging parents' well-being. This study showed that older adults who wish to increase the likelihood of receiving support from their children might consider investing in their children, not only in an emotional sense, but also by assisting their sons in child care.

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