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## Adult Children's Relationships With Married Parents, Divorced Parents, and Stepparents: Biology, Marriage, or Residence?

*The author compared the strength of the relationships that adult children have with different types of parents: biological parents who remained married, stepparents, and biological parents who divorced. He analyzed Dutch life history data containing detailed measures of living arrangements and used multilevel models to make comparisons both between and within children (N = 4,454). The results revealed large differences in the strength of ties across parent types, but these were strongly reduced when differences in the length of shared residence during childhood were taken into account. Nonetheless, even after differences in investment opportunities were considered, there were negative effects of divorce and positive effects of biological relatedness. The "marriage protection" effect was stronger, especially for fathers, than the biological relatedness effect, pointing to the primacy of marriage over biology for parent-child relations in adulthood.*

One of the consequences of the rapid increase in divorce and remarriage is that ties between parents and adult children are increasingly

diverse. A father or mother can have children from a current union, stepchildren, and biological children from a previous union. For adult children, there is increasing diversity too, as more and more children have one or two stepparents in addition to biological parents. Some of these stepparents were present during childhood, whereas other stepparents entered later in the child's life course. Although this diversity may not be so common as to warrant policy interest right now, it will become more and more common as the Baby Boom cohorts, who have experienced high levels of divorce and remarriage, begin to enter old age.

There are two reasons why this diversity is important to study. First, increasing diversity in parent-child ties introduces new problems and dilemmas for parents and adult children. For example, children must decide how they allocate time and support among different types of parents, and there are few normative or logical guidelines about how to do this (Ganong & Coleman, 1994, 2006). Similarly, parents may be faced with "collective ambivalence"—a feeling of uncertainty about how to behave—toward their children (Ward, Spitze, & Deane, 2009). This may lead to differences in the way adult children are treated within the family, which may in turn have repercussions in the form of inequalities in child well-being (Pillemer, Sutor, Pardo, & Henderson, 2010). Second, increasing diversity raises important theoretical questions about parent-child ties in general and, in particular, about the role of biology, marriage, and shared

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residence for understanding parent–child ties (Anderson, Kaplan, & Lancaster, 1999; Hofferth & Anderson, 2003; King, 2009). Because there are now several different types of parent–child ties, underlying theories about the strength of such ties can be tested more directly than was possible in the past, when parent–child ties were more homogeneous in nature.

Two types of studies have addressed the issue of increasing diversity. First, there is an important stream of studies on the effects of *parental divorce*. Some of these studies have focused on young children and describe how the involvement of fathers in the child's life changes after divorce (Cheadle, Amato, & King, 2010; Swiss & Le Bourdais, 2009). Other studies have focused on adult children and show that children who experienced a parental divorce when they were growing up have weaker relationships with their father than children whose parents remained married (Albertini & Garriga, 2011; Aquilino, 2006; de Graaf & Fokkema, 2007). Relationships between adult children and their mothers are negatively affected by divorce as well, although these effects tend to be weaker (Kalmijn, 2012). The negative effect of parental divorce is often interpreted in terms of the interrupted investment possibilities that fathers face after divorce. Because divorced fathers are less able to spend time with their children when the children are young, fathers often invest less in their children, and the relationship gradually deteriorates over time. Another argument is that divorced fathers miss the protective role of marriage: After divorce, fathers not only lose a spouse but also a female kinkeeper (Kalmijn, 2007b; Stephens, 1996).

A second stream of studies has examined the role of *stepparenting* (Ganong & Coleman, 1994; Ganong, Coleman, & Jamison, 2011; King, 2006). Most of these studies focused on young children and used a within-family design. Some authors found no differences in father involvement between stepchildren and biological children in such blended families (Hofferth & Anderson, 2003), but other authors have found that fathers are closer on average to their biological children than to their stepchildren (Evenhouse & Reilly, 2004; Schnettler & Steinbach, 2011). The negative effect of being a stepparent has often been interpreted in terms of the importance of biological relatedness for parental investments in children. Other studies have compared different types of fathers of the

*same child*. For example, King has compared the child's relationship with his or her stepfather, his or her nonresident biological father, and his or her resident biological mother (King, 2006, 2007, 2009; White & Gilbreth, 2001). These studies show that ties to stepfathers are usually stronger than ties to nonresident biological parents, suggesting that shared residence is more important than biological relatedness (King, 2006). Most of these studies focused on young children who were still living with their parent(s). Less is known about differences between stepparents and biological parents at an adult age.

In this study, I compared adult children's relationships with three types of parents: (a) biological parents who remained married, (b) biological parents who divorced when the child was young, and (c) stepparents. Comparisons were made for both fathers and mothers so that there were six types of parents to consider. To make these comparisons, I used a recently conducted survey in the Netherlands in which information was gathered on all parent figures who played a role in the respondent's childhood (Oudejans & Kalmijn, 2013). Because of the detailed retrospective data on childhood living arrangements, I was able to examine how many years of shared residence each parent had with the child. Moreover, for each parent, information was collected on the current relationship, in particular on how much contact there is, how much support is being exchanged, and on the perceived quality of the tie. In the analyses, I pooled all types of parents and used multilevel models to analyze parent–child relationships (i.e., random effects regression and fixed effects regression models). In the random effects models, I made comparisons between children and parents simultaneously. In the fixed effects models, I made comparisons *within* (adult) children, that is, different parents belonging to the same child. Note that when I talk about stepparents, I mean stepparents with whom the child lived in the past.

The contribution of this study to the existing literature lies in its focus on children's relationships to their parents when the children are adult and living on their own. Most of the work on stepparents has focused on children who are still living at home. An important implication of this shift in focus is that we obtain a view of the *long-term* effects of shared residence. Previous

studies have examined effects of the *current* residence situation of the parent. For example, King (2006) showed that young children are closer to a (resident) stepfather than to a nonresident father. Moreover, she showed that close ties to a stepfather are more beneficial for child outcomes than close ties to a nonresident biological father. In King's view, these findings support the hypothesis that residence is more important than biology. I focus on the relationships that children have with their parents when children are adults and living on their own, and I relate this to the residence history of the parent and child. Specifically, I examined effects of the duration of shared residence when young on the present quality of the tie between parent and adult child. In addition, I examined the extent to which differences in the quality of different types of parent-child ties can be explained by residential histories.

Another contribution of this research is that I was able to examine the effects of both residence and marriage. In previous work that focused on young children, marriage and residence overlap, except in the case in which parents are living together unmarried (Hofferth & Anderson, 2003). In my study, the focus was on adult children, and this leads to a different view of the effects of marriage. More specifically, the effect of marriage here pertains to the issue of whether or not the father of the child is still married to the mother of the child. As I discuss below, I expected the marital tie to have an additional beneficial effect on the father-child relationship when children are older, quite apart from how much time the father lived with the child in the past (the residence effect). Note that I abstained from analyzing the difference between married and cohabiting parents because my concern was with the question of whether the father is still tied to the mother residentially, not with the legal nature of that tie.

Finally, I added a different setting to the literature by examining these issues as they pertain to the Netherlands. Although my work is largely occupied with testing hypotheses that are applicable more generally, it remains important to broaden the empirical base. The Netherlands is a good example of a modern western European country. Dutch divorce and marriage rates are average for western Europe (Kalmijn, 2007a), and the frequency of contact between adult children and older parents is also comparable to that in other western European countries (Hank, 2007).

## BACKGROUND AND HYPOTHESES

One debate in family studies revolves around the question of whether parents "favor" children who are biologically related to them. When parents invest time and effort in their children, their children are more likely to survive. If one assumes that the tendency to invest in children is at least in part genetically determined, one can then argue that investing in biological children has a reproductive advantage (Anderson et al., 1999; Hofferth & Anderson, 2003; Schnettler & Steinbach, 2011). In other words, if parents invest in biological children, their genes are more likely to be transmitted to future generations. In evolutionary models, genes are the only relevant actors in the evolution (Dawkins, 1976). Hence, one could argue that genes that discriminate between biological and nonbiological offspring have a greater chance of surviving the evolutionary process than genes that do not discriminate. As a result, parents would be more likely to invest in biological offspring than in stepchildren.

Even if the evolutionary theory does not apply to the present case, biology is relevant because it also carries a social distinction. People make a difference between biological and stepchildren in their way of thinking about themselves and about others. This distinction therefore becomes relevant in the way parents behave toward others as well. One example of this lies in the ambiguous social role of the stepfather. Because a stepfather is often not considered to be the "real" father, he may be excluded from the domain of parenting by the mother, and the children themselves may try to maintain a distance from him (Ganong & Coleman, 1994; Hofferth & Anderson, 2003). These differences lead to lower investments in children, which in turn will translate into weaker ties with the children at an adult age. Research also has shown that normative obligations to support older parents are weaker when parents are not biologically related (Ganong & Coleman, 2006). The first hypothesis thus was that *adult children have a stronger tie to their biological parents than to their stepparents* (the biology hypothesis).

A second debate revolves around the importance of marriage for parent-child ties (Hofferth & Anderson, 2003; Stephens, 1996). Several authors have argued that, especially for fathers, marriage and children are a "package deal" (Kalmijn, 2007b; Stephens). The reasoning

behind this is that mothers invest more in family relationships than fathers. Mothers arrange family meetings, they initiate contact with adult children, they keep track of birthdays, they send holiday cards—in short, they are the kinkeepers (Di Leonardo, 1987). This division of labor in marriage coincides with the marital division of labor in other domains, such as household labor and paid labor. When fathers are married to the mother of their children, they benefit from this division of labor because children tend to visit parents together and they provide social and emotional support to both parents simultaneously. When fathers divorce, they lose not only a spouse but also a kinkeeper. As a result, fathers may be less able to maintain ties with their children when the children are adults and the fathers are not living with the mother anymore. A similar but weaker argument can be made for parents in general, regardless of gender. When parents are divorced, adult children cannot see their parents simultaneously, leading to less time available per parent (Kalmijn, 2012). Adult children with divorced parents may also face conflicting loyalties after divorce, especially when there was much conflict, and this may lead to less closeness to one of the parents, either the father or the mother (Amato & Afifi, 2006). The second hypothesis was that *adult children have a stronger tie to a parent who remained married than to a parent who divorced. This effect is stronger for fathers than for mothers* (the marriage hypothesis).

In their work on stepfathers, Hofferth and Anderson (2003) also used the perspectives of marriage and biology to understand involvement of fathers in (young) children. Because they found few differences between stepchildren and biological children in the same family (i.e., in blended families), they concluded that marriage was a more influential factor than biology. It is also possible, however, that both hypotheses are true. Biological children can have an advantage when their father is still married (a marriage advantage), and biological children can have an advantage to stepchildren (a biological advantage). To see which influence is stronger, consider all three types of parents: (A) married biological fathers, (B) divorced biological fathers, and (C) stepfathers. If the marriage effect (A–B) is stronger than the biology effect (A–C), this implies that  $C > B$ . Hence, children's ties to stepfathers from a union that still exists should be stronger than ties to

biological fathers who divorced. Interestingly enough, this comparison can also be made within a child. Moreover, the effect can be examined at an adult age, something that has not been done in most earlier work on stepparenting. The third hypothesis, therefore, was that *adult children have stronger ties to a stepfather than to a biological father who divorced* (primacy of marriage over biology). For mothers, a similar argument can be made in principle, but I argue that the marriage effect applies in particular to fathers, and hence it is less clear what the outcome will be.

Another and often-used hypothesis about parent–child ties centers around the notion of shared residence (King, 2006). Previous studies have focused on shared residence when children are young. In these cases, *residence* refers to the effect of living with a parent on the relationship with the parent. When the focus is on adult children, *residence* refers to the effect of the length of time the child lived with the parent on the quality of the tie at a later age, when the child is living independently. The amount of time that the parent and child spend together when the child is growing up is an important indicator of the investments that parents make in children (Sayer, Bianchi, & Robinson, 2004). Investments are usually defined as the efforts that parents make to contribute to the emotional and physical well-being of their children. According to research on personal relationships, investments in others are also investments in the relationship (Rusbult, Martz, & Agnew, 1998). Hence, investments in children will not only contribute to child well-being but will also lead to a stronger parent–child relationship in the long run. The fourth hypothesis was that *the longer the parent and child shared residence during childhood, the stronger the tie between parent and adult child* (duration hypothesis).

The duration hypothesis may also be relevant for comparing types of relationships. More specially, I argue that the history of shared residence in part explains differences between different types of father–child relationships. One reason why divorced fathers in particular would experience a deterioration of the ties to their children lies in the fact that fathers rarely get custody. Although many divorced fathers remain involved in the lives of their children, this involvement will typically be less intensive than it was before the divorce.

An early decline in involvement can be seen as a decline in investment in children, which, according to principles of reciprocity, will lead to less frequent support from and contact with children when children are older (Aquilino, 2006; de Graaf & Fokkema, 2007). Suggestive evidence for this notion is that the long-term effects of divorce on father-child relationships are generally less negative when the parents divorced at an older age (Aquilino, 1994; Kalmijn, 2012). Hence, the long-term negative effect of divorce may in part be due to a difference in the length of shared residence. Similar arguments can be made about stepparents: Relationships between adult children and stepparents may be weaker, but this can be due to the more limited time that a stepparent was involved in the child's life. A stepparent who was present from birth, for example, would not be perceived as different from a biological father (Hamilton, Cheng, & Powell, 2007). Because stepparents often live a shorter period of time with the child than biological parents (although not necessarily shorter than divorced nonresident parents), the long-term effect of "biology" may in part be due to a difference in the length of shared residence. The last hypothesis was that *the negative long-term effects of divorce and stepparenting on parent-child ties are partly due to a shorter duration of shared residence* (spuriousness hypothesis).

#### METHOD

The data I used come from the survey Longitudinal Internet Studies for the Social Sciences, which is publicly available through <http://www.lissdata.nl>. This survey is based on a representative probability sample of approximately 5,000 households in the Dutch population. The response rate at the household level was 48%, which is about average for response rates in the Netherlands (Scherpenzeel, 2009). All household members 16 years of age and older were asked to complete short Internet questionnaires. Respondents were paid when they completed a questionnaire. The Netherlands is in the top 10 countries with the highest Internet penetration rates (World Telecommunication/ICT Indicators Database Online, 2012). Households without Internet access (or without broadband) received a broadband Internet connection and were loaned a computer if they

did not have one. Older respondents without Internet access and a computer received training in how to use the Internet. Each month, a different questionnaire was presented, covering a specific topic (e.g., work, health, family). I used a special biographical module that was held in July and August 2012 and that contained detailed retrospective questions on family background (Oudejans & Kalmijn, 2013). The response rate on this specific module was 84% ( $N = 5,247$ ). The module was presented only to household members who were the head of the household or the partner of the head (single persons were included). None of these respondents lived with parents.

Respondents were asked about their living arrangement at birth and what changes they experienced in their living arrangement before leaving home and living independently. If their living arrangement changed, detailed information was gathered on all subsequent households. For one of these "secondary" households, additional questions were asked about the parent figures. If there were two or more secondary households, the questionnaire focused on the one in which the child spent most of his or her childhood. If one of the secondary households was a stepfamily, however, this household was given precedence in order to not miss any stepparent figure in the child's life. Of the 5,247 respondents, 706 did not live with both their biological parents at least some time before leaving home. Of these, 229 lived in stepfamilies.

The data were analyzed as parent-child dyads. When I analyzed contact, quality, and support, the sample was limited to parents who are still living. The number of living parents was 4,454, of whom 501 were divorced parents and 117 were stepparents. The first dependent variable in the parent-child analysis was the frequency of face-to-face contact between parent and child. This was coded into midpoint values assigned to the frequency categories (e.g., weekly = 52). To avoid the skewness of the resulting variable, the frequencies were logged. The second dependent variable was the quality of the relationship between the father and the child. The quality was measured on a 5-point scale (1 = *very good*, 2 = *good*, 3 = *reasonable*, 4 = *not so good*, 5 = *poor*). The last variable was support exchange with the parent. Seven items were presented: (a) receiving household help from the parent, (b) giving household help to the parent, (c) receiving other

Table 1. Means and Standard Deviations of Variables Used in the Analyses (N = 4,454)

Variable	<i>M</i>	<i>SD</i>	Minimum	Maximum
Daughter	.58			
Number of siblings	1.98	1.48	0	10
Education (years)	12.43	2.91	6	17
Age child	41.18	10.48	18	76
With partner	.57			
Log contact	2.66	1.26	0	5.86
Quality	3.88	1.04	1	5
Support	1.83	0.44	1	3
Duration of residence (years)	17.02	3.29	0	18

practical support from the parent, (d) giving other practical support to the parent, (e) receiving interest in one's personal well-being from the parent, (f) showing interest in the parent's personal well-being, and (g) receiving good advice from the parent. For each type of support, respondents were asked how often the support had been exchanged in the past 3 months (1 = *never*, 2 = *occasionally*, 3 = *often*). The scale is the sum of the items and the reliability was good ( $\alpha = .76$  for mothers,  $.78$  for fathers, and  $.78$  for stepparents). The means and standard deviations of all variables are presented in Table 1.

The main independent variables were obtained from the retrospective data on childhood living arrangements. I considered six types of parents: (a) biological mothers, (b) divorced mothers, (c) biological fathers, (d) divorced fathers, (e) stepmothers, and (f) stepfathers. A divorce had to occur during childhood. Marriage and cohabitation were treated as the same, but there were few cohabiting couples with children in the parent generation. The effect of parent type was approached with a set of dummy variables. Different types of contrasts for these dummy variables were used depending on the hypothesis (see below). I also made finer distinctions in additional analyses (discussed in the text) between divorced parents who were resident parents after divorce and divorced parents who were nonresident parents. Finally, I used the number of years that the parent and child lived together. The age at leaving home was also used in constructing these variables, but years at home after age 18 were not counted given the high level of independence after this age.

For the random effects models, I included characteristics of the adult child as control variables: the respondent's age, sex, the number of siblings, whether the child is living with a partner, and the level of education (coded as years of schooling). These variables are known to be related to contact frequency and support exchange. Information on geographical distance was not included because this may potentially mediate the effects (Silverstein, 1995). I explored effects of the parent's socioeconomic status, religiosity, and education, but none of these affected contact and quality. Because using these variables introduces missing values in the analyses, I decided to not include them in the models.

I used multivariate random and fixed effects regression models. The fixed effects models compare parents within children, and this controls implicitly for all unmeasured child characteristics. This is similar in spirit to King's (2006) analyses, which were based on young resident children. The random effects models make comparisons between children and fathers simultaneously and control for measured child characteristics. Both types of models take into account the clustering of parent-child relationships within adult children. Because of the relatively small samples, the random effects models will be more powerful statistically.

## RESULTS

In Table 2, I present information on the amount of time that different types of parents shared with the child. Biological parents who did not divorce lived with the child for 17.7 years. There is also variance in this number, because the age at leaving home varied. When the parents divorced, the child lived with the biological father only 11.1 years, while living 15.9 years with the biological mother. The variance in these durations is substantial. If one separates these figures depending on whether the parent was the resident parent or not, one sees even fewer years for the nonresident divorced parent, as expected. Interesting is that when mothers were the nonresident parent, duration of coresidence was higher than when fathers were the nonresident parent. This likely has to do with the fact that fathers rarely get custody when children are very young (Kalmijn & de Graaf, 2000). Stepparents had the shortest duration of shared residence with the child: 5.6 years for stepmothers and 8.0

Table 2. Duration of Shared Residence (in Years) by Type of Parent

Type of parent	M	SD	n <sup>a</sup>
Biological mother	17.70	1.90	4,452
Biological father	17.51	2.64	4,452
Stepmother	5.61	4.42	79
Stepfather	8.03	5.22	150
Divorced mother	15.94	3.97	408
Resident after divorce	17.36	2.17	279
Nonresident after divorce	13.50	4.38	70
Divorced father	11.12	5.55	408
Resident after divorce	15.49	3.75	70
Nonresident after divorce	9.82	5.29	279

<sup>a</sup>Based on full life history data, including parents who are no longer living.

years for stepfathers. This shows that biological divorced fathers share, on average, still more time with the child than stepfathers.

In Table 3, I present the random effects models. All three outcome variables were standardized before the model was estimated so that coefficients can be interpreted in terms of effect sizes. Before I turn to the tests of the hypotheses, I discuss the variance decomposition. Parents are nested within children, and hence the question arises of how much of the variance is between children and how much is between parents within children. To examine this, I estimated an empty model and calculate the intraclass coefficient  $\rho$ , which is the amount of variance that is due to the between-child differences. For contact,  $\rho = .73$ ; for quality,  $\rho = .61$ ; and for support,  $\rho = .73$ . Hence, there was considerable similarity in the relationships that a given child has with different parents. Nonetheless, the within-children correlation is not perfect, and this leaves room for the effects I assumed in our hypotheses.

I first discuss contact frequency. Biological mothers who did not divorce are the reference category for other types of mothers; biological fathers who did not divorce are the reference category for other types of fathers. To obtain these contrasts, two models were estimated, and the results were merged into one table (Table 3). I observed negative effects of divorced mothers, showing that adult children have less frequent contact with divorced mothers than with married mothers. Adult children also have significantly less frequent contact with stepmothers than with biological mothers. I did not see a difference

in contact between biological mothers and fathers. When switching the reference category to biological fathers, I observed a negative effect of stepfathers and divorced fathers, with the latter effect being stronger than the former ( $z = 2.10$ ). All the effects, with the exception of the difference between divorced and married mothers, are substantial in magnitude. In sum, adult children have much less contact with divorced parents and with stepparents than with biological married parents. This is true for both fathers and mothers, but the order is different. For mothers, stepparenting is most negative; for fathers, divorce is most negative. At first, these results confirm the biology hypothesis and the marriage hypothesis. I note that the effect of divorce is significantly stronger for fathers than for mothers, showing that the marriage hypothesis applies mostly to fathers ( $z = 10.23$ ).

In Model 2, I added duration of residence. I noted a significant effect of duration: For each year of shared residence, contact frequency increased by 0.055 SD. Hence, when I compared 0 and 18 years of residence, the maximum range, the effect was 0.99 SD, which is a substantial effect. This confirms the shared residence hypothesis. The more time parent and child shared when the child was young, the more contact there currently is. More important, I observed that differences between different types of parents are strongly reduced when shared residence is added to the model. The effects of stepparents are reduced by 82% for fathers and 72% for mothers, and the effects of divorce are reduced by 49% for fathers and 29% for mothers. Most striking is that the disadvantage for stepfathers (compared to biological fathers) is no longer significant when one takes duration into account. This confirms the spuriousness hypothesis and refutes the biology hypothesis, at least for contact. The marriage hypothesis, especially for fathers, still stands, because there remains a negative effect of divorce on contact even when the shorter period of residence is taken into account. I do note, however, that about half of the initially observed divorce effect is due to the fact that divorced fathers spent less time living with the child.

Next, I turn to the models for quality. The effects of the type of parent were similar to those for contact: Adult children have stronger ties to biological parents than to stepparents and divorced parents. For mothers, stepparenting is most negative; for fathers, divorce and

Table 3. Random Effects Regression of Parent–Child Relationships on Selected Variables (N = 4,454)

Predictor	Model 1: Contact	Model 2: Contact	Model 3: Quality	Model 4: Quality	Model 5: Support	Model 6: Support
Daughter	−0.025 (0.037)	−0.021 (0.037)	0.032 (0.035)	0.036 (0.035)	0.253* (0.036)	0.258* (0.036)
Number of siblings	−0.024† (0.012)	−0.023† (0.012)	−0.002 (0.012)	−0.002 (0.012)	−0.045* (0.012)	−0.045* (0.012)
Education	−0.012† (0.006)	−0.012† (0.006)	0.008 (0.006)	0.008 (0.006)	0.024* (0.006)	0.024* (0.006)
Age child	−0.004* (0.002)	−0.004* (0.002)	−0.011* (0.002)	−0.012* (0.002)	−0.009* (0.002)	−0.009* (0.002)
With partner	−0.089* (0.039)	−0.091* (0.038)	−0.021 (0.037)	−0.023 (0.037)	−0.164* (0.037)	−0.167* (0.037)
Type of parent						
Biological mother	— <sup>c</sup>	— <sup>c</sup>	— <sup>c</sup>	— <sup>c</sup>	— <sup>c</sup>	— <sup>c</sup>
Biological father	−0.036* (0.018)	−0.030† (0.018)	−0.046* (0.022)	−0.042* (0.021)	−0.107* (0.018)	−0.101* (0.017)
Stepmother <sup>a</sup>	−1.034* (0.124)	−0.291* (0.138)	−1.376* (0.135)	−0.708* (0.151)	−1.093* (0.121)	−0.417* (0.134)
Stepfather <sup>b</sup>	−0.522* (0.087)	−0.093 (0.093)	−0.665* (0.095)	−0.255* (0.104)	−0.664* (0.084)	−0.274* (0.090)
Divorced mother <sup>a</sup>	−0.225* (0.060)	−0.160* (0.060)	−0.401* (0.060)	−0.334* (0.060)	−0.258* (0.058)	−0.198* (0.058)
Divorced father <sup>b</sup>	−0.697* (0.064)	−0.358* (0.069)	−0.828* (0.065)	−0.515* (0.073)	−0.788* (0.062)	−0.480* (0.067)
Duration of residence		0.055* (0.005)		0.049* (0.005)		0.050* (0.005)
Constant	0.501* (0.124)	−0.462* (0.148)	0.480* (0.118)	−0.393* (0.150)	0.262* (0.119)	−0.613* (0.143)
$\sigma_u$	.85	.85	.75	.75	.82	.82
$\sigma_i$	.51	.50	.62	.61	.50	.49
$R^2$	.044	.060	.076	.086	.105	.114

Note: Numbers in parentheses are standard errors. Dependent variables are standardized.  $\sigma_u$  is the standard deviation between children;  $\sigma_i$  is the standard deviation within children (across parents).

<sup>a</sup>Reference category is biological mothers. <sup>b</sup>Reference category is biological fathers. <sup>c</sup>Reported results are based on different models, with different reference categories (see text).

† $p < .10$ . \* $p < .05$ .

stepparenting are about equally negative. Model 4 shows that duration has a strong and significant effect. The longer a parent and child were together, the closer they are when the child is adult. Differences between types of parents are reduced considerably when duration is taken into account. These reductions are especially strong for stepfathers: Sixty-two percent of the difference between stepfathers and biological fathers disappears when duration is taken into account. For divorced fathers, the reduction is also substantial (38%), but the remaining effect of divorce is still strong ( $b = -.52$ ).

Finally, I turn to the models for support exchange. The findings are in line with those for quality. Adult children exchange less support with stepfathers and divorced fathers than with biological fathers. They also exchange less support with stepmothers than with biological mothers and somewhat less support with divorced mothers than with married mothers. The effect of duration is significant and explains much of the differences: 62% of the gap between biological and stepmothers and 59% of the gap between biological fathers and stepfathers. The disadvantage of being divorced for fathers is also reduced substantially. The effects remain



significant, however, suggesting that differences are not entirely spurious.

Is marriage more influential than biological relatedness? To test this, I compared divorced fathers and stepfathers. After controlling for duration, children have more contact with stepfathers than with biological divorced fathers ( $-.093$  vs.  $-.358$ ,  $z = 4.05$ ). The same result was obtained when I looked at quality ( $-.255$  vs.  $-.515$ ,  $z = 2.70$ ) and support exchange ( $-.274$  vs.  $-.480$ ,  $z = 2.58$ ). Hence, on all three counts adult children have a stronger tie to their stepfather than to their divorced biological father when the length of shared residence is held constant. In this sense, I support the primacy of marriage over biology for fathers. For mothers, there was only one significant difference: The quality of the relationship is higher for biological divorced mothers than for stepmothers ( $z = 2.49$ ). I note, however, that I did not expect a stronger marriage effect here. Moreover, for divorced mothers there will often have been shared residence after divorce. I turn to this issue next.

So far, no distinction has been made between divorced parents who were resident parents and divorced parents who were not. In additional models, I examined this difference. To some extent, this postdivorce residence effect will be captured by the length of residence, but it may also have an independent effect. Shared residence is determined here only for the most important secondary household. For fathers, I found positive and significant effects of being the resident (divorced) parent (.431 for contact, .886 for quality, and .604 for support, all  $ps < .01$ ). The effects of duration were still positive and significant in these models. These results show that not only longer residence but also postdivorce residence is influential in maintaining good relationships with adult children. For divorced mothers, these effects were smaller and less often significant, probably because of the smaller subsample (.206,  $p = .05$ , for contact; .295,  $p < .01$ , for quality; and .170,  $ns$ , for support).

The effects of the control variables are in line with prior research. Daughters exchange more support than sons with their parents, and being married and older was associated with less support exchange. More highly educated children have somewhat less frequent contact, but they exchange more support with their parents. In larger families, finally, I

observed less contact (per dyad) and less support, but this did not translate into weaker relationships in the sense of lower perceived quality.

To what extent are my findings affected by unmeasured differences between children? To address this, I made comparisons between different parents of the same children. In Table 4, I present the estimates of the fixed effects regression models. I can make several meaningful within-child contrasts here. First, I compared biological fathers and stepmothers as well as biological mothers and stepfathers. These within-child comparisons apply implicitly to persons who grew up (part of the time) with a biological parent and stepparent of the opposite sex. Second, I can make comparisons within gender: stepfathers with divorced biological fathers and stepmothers with divorced biological mothers. These divorced parents were implicitly the nonresident parents, because the comparison is made within children, and hence the comparison is based on children who have both a stepparent and a divorced parent of the opposite sex.

The results presented in Table 4 show that there is no difference between stepfathers and divorced biological fathers. This applies to all three outcomes. When I controlled for duration of residence, however, stepfathers appear to have an advantage, at least in terms of contact frequency and support exchange. This again suggests that marriage is more influential for fathers than biology. For the (smaller group of) stepmothers, the conclusion is different. Here, I see that adult children have stronger ties to their divorced biological mothers than to their stepmothers. These differences, however, are in part explained by differences in the length of shared residence.

I also made comparisons of parents who were involved in the same postdivorce family: Divorced mothers and stepfathers are the most common case. Here I again see an advantage of divorced biological mothers over stepfathers. This advantage is fully explained by the length of residence, however. The same conclusion applies when I compared divorced fathers and stepmothers.

## DISCUSSION

Using comparisons of adult children's relationships with multiple types of parents, this research

Table 4. Fixed Effects Regression of Parent–Child Relationships on Selected Variables (N = 4,454)

Predictor	Model 1: Contact	Model 2: Contact	Model 3: Quality	Model 4: Quality	Model 5: Support	Model 6: Support
Type of parent <sup>a</sup>						
Biological father	−0.033 <sup>†</sup> (0.019)	−0.025 (0.018)	−0.044 <sup>†</sup> (0.023)	−0.036 (0.022)	−0.088* (0.018)	−0.080* (0.018)
Stepmother	−0.738* (0.308)	−0.398 (0.302)	−0.656 <sup>†</sup> (0.374)	−0.293 (0.369)	−0.988* (0.302)	−0.634* (0.296)
Stepfather	−0.102 (0.254)	−0.106 (0.248)	−0.057 (0.309)	−0.061 (0.303)	−0.598* (0.250)	−0.602* (0.243)
Divorced mother	0.259 (0.270)	−0.122 (0.266)	0.333 (0.328)	−0.073 (0.325)	−0.072 (0.265)	−0.469 <sup>†</sup> (0.261)
Divorced father	−0.236 (0.271)	−0.333 (0.264)	−0.092 (0.329)	−0.196 (0.323)	−0.699* (0.266)	−0.801* (0.258)
Duration of residence		0.054* (0.006)		0.058* (0.007)		0.057* (0.006)
Constant	0.016 (0.038)	−0.888* (0.102)	0.007 (0.047)	−0.958* (0.125)	0.091* (0.038)	−0.850* (0.100)
Contrasts						
Stepfather–divorced father <sup>b</sup>	.133	.227*	.035	.135	.101	.199*
Stepmother–divorced mother <sup>c</sup>	−.996*	−.276 <sup>†</sup>	−.989*	−.220	−.916*	−.165
Stepfather–divorced mother <sup>c</sup>	−.361*	.016	−.390*	.013	−.526*	−.133
Stepmother–divorced father <sup>b</sup>	−.502*	−.065	−.564*	−.097	−.289*	.167
$\sigma_u$	.97	.95	.96	.92	.95	.95
$\sigma_i$	.51	.50	.62	.61	.50	.49
$R^2$	.010	.051	.002	.062	.044	.051

Note: Numbers in parentheses are standard errors. Dependent variables are standardized.  $\sigma_u$  is the standard deviation between children;  $\sigma_i$  is the standard deviation within children (across parents).

<sup>a</sup>Reference category: Biological mother. <sup>b</sup>Divorced father was resident father when compared to stepmother; divorced father was nonresident father when compared to stepfather. <sup>c</sup>Divorced mother was resident mother when compared to stepfather; divorced mother was nonresident mother when compared to stepmother.

<sup>†</sup> $p < .10$ . \* $p < .05$ .

was able to shed more light on alternative theoretical arguments about parent–child ties. The focus was on the strength of the tie between parent and adult child—measured with contact frequency, support exchange, and perceived quality—and this tie was linked to childhood living arrangements. The first hypothesis argued for an effect of biology, that is, the positive influence of being biologically related to a parent. A second hypothesis argued for the protective effect of marriage. Especially for fathers, being married to the child's mother strengthens the ties to his children, not only when children are young but also when children are older and independent. Third, I argued that differences between types of parents are due to the amount of investments parents made while the children were

young. I examined this via the effect of duration of residence, assuming that longer periods of shared residence would be associated with more investments. Coparenting will probably make this assumption less valid, but in the histories of the children analyzed here, coparenting was not that common (Spruijt & Duindam, 2009).

I found strong evidence for the influence of duration: The longer parents and children were together in childhood, the more contact there was later, the more support was exchanged, and the more positive the adult child was about the relationship. There is not much variance in duration for biological parents who remained married, so the question is whether this effect is not simply due to an additional effect of marriage. I checked the duration effect for

stepparents and divorced parents and found significant duration effects in this subsample as well. My second hypothesis about duration was also confirmed. I found that differences in duration explain about 40% to 60% of the differences in the strength of the ties between different types of parents. In particular, the initial "disadvantage" of stepfathers is strongly reduced when one holds constant the length of shared residence. The disadvantage of divorced fathers is also to some extent due to the fact that divorced fathers live a shorter period of time with the child. Hence, a large part of the original differences are spurious. For divorced fathers, this is mainly due to the interruption of their investment options after divorce. For stepfathers, this is mainly due to the fact that they usually do not enter the child's life very early.

There is still some evidence for the marriage hypothesis and the biology hypothesis. For two of the three outcomes (quality and support, but not contact), the effects of marriage (i.e., divorce) and stepparenting remain significant when controlling for duration. If both hypotheses are true to some extent, the question is, which of the two hypotheses is more important? To examine this, I compared stepfathers and divorced fathers. When I made this comparison, and when I controlled for duration, it appears that children have somewhat stronger ties to their stepfather than to their divorced biological father. This suggests that marriage is more important than biology. My finding echoes the results of King (2006), who found that young children feel somewhat closer to their stepfather than to their divorced biological father. She interpreted this in terms of the "primacy of residence." I found the same pattern when looking at adult children, pointing, in my view, to the "primacy of marriage." The interpretation is different because the marriage effect pertains to the kinkeeping role of the (former) spouse of the father, whereas the residence effect pertains to the day-to-day investments that parents and children are able to make in their relationship.

I end with some limitations and suggestions for further research. One limitation is the relatively small sample size. I tested all the differences with two types of models and for three outcomes, and the results seem robust. Nevertheless, I await replications of my findings with larger samples. With larger samples, there are also possibilities to make further

distinctions, for example, between different types of stepparents. For example, we could explore the dissolution of remarriage and the death of the remarried biological parent. I suspect that one reason why relationships with stepmothers are relatively weak lies in these underlying factors, but the sample size prohibited me from analyzing this issue.

Finally, I would like to advocate studies that incorporate both within-child and within-parent comparisons. Within-child designs basically control for unmeasured child characteristics. For example, if stepchildren have behavioral problems or if stepchildren are very independent, they may have developed weaker relationships with all their parents, regardless of the type of parent. Such differences would be taken into account when comparing different parents of the same child. This design does not, however, control for unmeasured parent characteristics. Within-family (or better within-parent) designs, on the other hand, control for unmeasured parent characteristics. For example, it could be possible that stepfathers have more behavioral problems than married fathers, and such differences may affect the comparisons between different types of parent-child types in an unfair way. When comparing different children of the same parent, such differences are controlled, but differences between children are not. Using both designs with one data set in one study would therefore yield a more powerful conclusion than a study with only one of the two designs.

## REFERENCES

- Albertini, M., & Garriga, A. (2011). The effect of divorce on parent-child contacts: Evidence on two declining effect hypotheses. *European Societies, 13*, 257-278. doi:10.1080/14616696.2010.483002
- Amato, P. R., & Afifi, T. D. (2006). Feeling caught between parents: Adult children's relations with parents and subjective well-being. *Journal of Marriage and Family, 68*, 222-235. doi:10.1111/j.1741-3737.2006.00243.x
- Anderson, K. G., Kaplan, H., & Lancaster, J. (1999). Paternal care by genetic fathers and stepfathers: I. Reports from Albuquerque men. *Evolution & Human Behavior, 20*, 405-431. doi:10.1016/S1090-5138(99)00023-9
- Aquilino, W. S. (1994). Later life parental divorce and widowhood: Impact on young adults' assessment of parent-child relations. *Journal of Marriage and the Family, 56*, 908-922. doi:10.2307/353602

- Aquilino, W. S. (2006). Noncustodial father-child relationship from adolescence into young adulthood. *Journal of Marriage and Family*, 68, 929-946. doi:10.1111/j.1741-3737.2006.00305.x
- Cheadle, J. E., Amato, P. R., & King, V. (2010). Patterns of nonresident father contact. *Demography*, 47, 205-225.
- Dawkins, R. (1976). *The selfish gene*. Oxford, UK: Oxford University Press.
- de Graaf, P. M., & Fokkema, T. (2007). Contacts between divorced and non-divorced parents and their adult children in the Netherlands: An investment perspective. *European Sociological Review*, 23, 263-277. doi:10.1093/esr/jcl032
- Di Leonardo, M. (1987). The female world of cards and holidays: Women, families, and the work of kinship. *Signs*, 12, 440-453.
- Evenhouse, E., & Reilly, S. (2004). A sibling study of stepchild well-being. *Journal of Human Resources*, 39, 248-276. doi:10.2307/3559012
- Ganong, L. H., & Coleman, M. (1994). *Remarried family relationships*. Thousand Oaks, CA: Sage.
- Ganong, L., & Coleman, M. (2006). Obligations to stepparents acquired in later life: Relationship quality and acuity of needs. *Journals of Gerontology: Series B: Psychological Sciences and Social Sciences*, 61, 80-88.
- Ganong, L. H., Coleman, M., & Jamison, T. (2011). Patterns of stepchild-stepparent relationship development. *Journal of Marriage and Family*, 73, 396-413. doi:10.1111/j.1741-3737.2010.00814.x
- Hamilton, L., Cheng, S., & Powell, B. (2007). Adoptive parents, adoptive parents: Evaluating the importance of biological ties for parental investment. *American Sociological Review*, 72, 95-116.
- Hank, K. (2007). Proximity and contacts between older parents and their children: A European comparison. *Journal of Marriage and Family*, 69, 157-173. doi:10.1177/0192513X08322627
- Hofferth, S. L., & Anderson, K. G. (2003). Are all dads equal? Biology versus marriage as a basis for paternal investment. *Journal of Marriage and Family*, 65, 213-232. doi:10.1111/j.1741-3737.2003.00213.x
- Kalmijn, M. (2007a). Explaining cross-national differences in marriage, cohabitation, and divorce in Europe, 1990-2000. *Population Studies*, 61, 243-263. doi:10.1080/00324720701571806
- Kalmijn, M. (2007b). Gender differences in the effects of divorce, widowhood and remarriage on intergenerational support: Does marriage protect fathers? *Social Forces*, 85, 1079-1104. doi:10.1353/sof.2007.0043
- Kalmijn, M. (2012). Long-term effects of divorce on parent-child relationships: Within-family comparisons of fathers and mothers. *European Sociological Review*. Advance online publication. doi:10.1093/esr/jcs066
- Kalmijn, M., & de Graaf, P. (2000). Gescheiden vaders en hun kinderen: Een empirische analyse van voogdij en bezoeksfrequentie [Divorced fathers and their children: An empirical analysis of custody and visitation]. *Bevolking en Gezin*, 29, 59-84.
- King, V. (2006). The antecedents and consequences of adolescents' relationships with stepfathers and nonresident fathers. *Journal of Marriage and Family*, 68, 910-928. doi:10.1111/j.1741-3737.2006.00304.x
- King, V. (2007). When children have two mothers: Relationships with nonresident mothers, stepmothers, and fathers. *Journal of Marriage and Family*, 69, 1178-1193. doi:10.1111/j.1741-3737.2007.00440.x
- King, V. (2009). Stepfamily formation: Implications for adolescent ties to mothers, nonresident fathers, and stepfathers. *Journal of Marriage and Family*, 71, 954-968.
- Oudejans, M., & Kalmijn, M. (2013). *Life History Questionnaire*. Tilburg, the Netherlands: CentERdata.
- Pillemer, K., Suito, J. J., Pardo, S., & Henderson, C. (2010). Mothers' differentiation and depressive symptoms among adult children. *Journal of Marriage and Family*, 72, 333-345. doi:10.1111/j.1741-3737.2010.00703.x
- Rusbult, C. E., Martz, J. M., & Agnew, C. R. (1998). The Investment Model Scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size. *Personal Relationships*, 5, 357-391. doi:10.1111/j.1475-6811.1998.tb00177.x
- Sayer, L. C., Bianchi, S. M., & Robinson, J. P. (2004). Are parents investing less in children? Trends in mother's and father's time with children. *American Journal of Sociology*, 110, 1-43. doi:10.1086/386270
- Scherpenzeel, A. (2009). *Start of the LISS panel: Sample and recruitment of a probability-based Internet panel*. Tilburg, the Netherlands: CentERdata.
- Schnettler, S., & Steinbach, A. (2011). How do biological and social kinship play out within families in the US? *Zeitschrift für Familienforschung*, 23, 173-195.
- Silverstein, M. (1995). Stability and change in temporal distance between the elderly and their children. *Demography*, 32, 29-46. doi:10.2307/2061895
- Spruijt, E., & Duindam, V. (2009). Joint physical custody in the Netherlands and the well-being of children. *Journal of Divorce and Remarriage*, 51, 65-82.
- Stephens, L. S. (1996). Will Johnny see Daddy this week? An empirical test of three theoretical

- perspectives of postdivorce contact. *Journal of Family Issues*, 17, 466–494. doi:10.1177/019251396017004003
- Swiss, L., & Le Bourdais, C. (2009). Father–child contact after separation: The influence of living arrangements. *Journal of Family Issues*, 30, 623–652. doi:10.1177/0192513X08331023
- Ward, R. A., Spitze, G., & Deane, G. (2009). The more the merrier? Multiple parent–adult child relations. *Journal of Marriage and Family*, 71, 161–173. doi:10.1111/j.1741-3737.2008.00587.x
- White, L., & Gilbreth, J. G. (2001). When children have two fathers: Effects of relationships with stepfathers and noncustodial fathers on adolescent outcomes. *Journal of Marriage and Family*, 63, 155–167. doi:10.1111/j.1741-3737.2001.00155.x
- World Telecommunication/ICT Indicators Database Online [CD-ROM]. (2012). Geneva, Switzerland: International Telecommunication Union.