American Sociological Review
2019, Vol. 84(5) 876–904

DOI: 10.1177/0003122419871959
journals.sagepub.com/home/asr

Family Complexity into Adulthood: The Central Role of Mothers in Shaping Intergenerational Ties

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Abstract

As a result of the divorce revolution, more children grow up in complex families. Yet, we know little about how family complexity affects relationships when children are adults and parents are ageing. In this article, we use unique survey data to test fundamental ideas about intergenerational ties: the role of biology, partnerships (marriage and cohabitation), residence, and selection. The survey used a register-based oversample of Dutch adults who grew up in nonstandard families, collected data among adult children *and* their parent figures, and used a double multi-actor design in which adult children reported on their parents and parents reported on their children. Using random- and fixed-effects models, we confirm most hypotheses but the results are highly gendered. For fathers, we find evidence for a partnership premium and no disadvantage of being a stepparent once the length of residence is adjusted. For mothers, the partnership premium is weaker but the effect of biology is strong: stepmother-stepchild ties are much weaker, even after taking residence patterns into account. Biological mothers are the primary kinkeepers, and for fathers of any type, their relationship to children depends on their partnership to the biological mother. Within-family comparisons suggest that selection into divorce and remarriage do not explain these disadvantages.

Keywords

divorce, stepfamilies, intergenerational relationships, adoption, biological relatedness

Over the past 50 years, with the divorce revolution that has occurred in all Western societies, the nature of parent-child relationships has changed rapidly. An increasing number of children grow up with multiple "types" of parents: resident and nonresident biological parents, and the different possible partners of these parents. Similarly, more parents have multiple types of children: children from a current union, children from a former union, children with whom they do or do not share a household, and possibly stepchildren. This increase in what can be called "family complexity" (Thomson 2014) raises important questions about the foundations of parent-child relationships.

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The relevance of these questions becomes evident when one considers the importance of parent-child ties for social cohesion and inequality (Lye 1996; Seltzer and Bianchi 2013; Swartz 2009). First, strong intergenerational ties are key for social cohesion (Silverstein and Bengtson 1997). In contemporary societies, parent-child bonds are characterized less by utilitarian exchanges of assistance and more by voluntary interactions (Giddens 1992). Given the voluntary nature of these associations, family transitions can have even more repercussions for the strength of intergenerational ties. Second, parent-child relations have become key in the (re)production of inequality, even past the initial stage of parent-child coresidence. Some scholars argue that given today's economic and labor market insecurities, parents are even more crucial in enabling children to reach a number of milestones, such as enrolling in and finishing higher education, purchasing a home, and having children of their own, while also remaining engaged in the labor market (for an in-depth review, see Silverstein and Giarrusso 2010; Swartz 2009). In other words, the possibility of relying on parental solidarity, which might be affected by the experience of family complexity, appears to be a crucial factor in stratification of the younger generation (McLanahan 2004; Staff, Ramirez, and Vuolo 2015). Thus, increases in family complexity warrant further theorizing and new data for a better understanding of the present-day diversity of parent-child ties.

Adult intergenerational relationships are the subject of two important theoretical debates. The first debate—which mainly focuses on the precarious position of stepparents, although by extension also concerns the role of adoptive parents—is about the importance of biology vis-à-vis residence (Coleman 1994; Popenoe 1994). One side of this debate argues that the strength of parent-child ties is rooted in biological relatedness. It is important to highlight that this line of reasoning recognizes not only the evolutionary underpinnings of human behaviors (Anderson, Kaplan, and Lancaster 1999; Buss 2016), but also the existence of social norms about the primacy of biology (Cherlin 2004; Ganong et al. 1998; Rossi and Rossi 1990; van Houdt, Kalmijn, and Ivanova 2018). The other side of this debate argues that adult ties between parents and children largely depend on early parental investments. Therefore, coresidence (which is often used as a proxy for investments, or at least, for the possibility to make such investments) and its duration are key factors here. Such features would not only explain variation in the strength of intergenerational relations in adulthood, but they would also account for the disadvantaged position of non-biological parents vis-à-vis biological parents (Coleman, Ganong, and Fine 2000; Hofferth and Anderson 2003). Although this debate often emerges in relation to stepparent-child ties, another highly appropriate test of these propositions is presented by examining the strength of intergenerational ties in adoptive families, which are also characterized by "social parenting" (Hamilton, Cheng, and Powell 2007).

The second debate is around the role of marriage and gender for the parent-child relationship (Clark and Kenney 2010; Kalmijn 2007). This debate largely, albeit not exclusively, focuses on the problematic relationships of divorced fathers with their adult children in later life (Amato and Afifi 2006; Fomby and Cherlin 2007). The main argument is that because it is women who most often take on a leading role in kinkeeping, fathers' ties to their adult children depend to a large extent on the man's tie to the mother of these children (Di Leonardo 1987; Hagestad 1986; Rosenthal 1985). In other words, the gendered nature of kinkeeping implies a key role for mothers in establishing the strength of ties between adult children and other parent figures. In light of "primacy of biology" arguments, the biological mother is most likely to obtain a central position as kinkeeper. This line of reasoning implies that divorced and widowed fathers will have weaker relations with children compared to fathers who are still together with the mother. As with the primacy of biology argument, however, the presumed benefit of marriage has been criticized for not taking into account the shorter period that a divorced father lives with a child (Juby et al. 2007). There is also debate about the importance of marriage vis-à-vis cohabitation for parent-child ties (Carlson, McLanahan, and England 2004), but in our cohorts and in the country we study (the Netherlands), most parents were married and, as we will show, differences between married and cohabiting parents are small. We therefore combine cohabiting and married parents and use the term "partnership" in the remainder of this article to refer to both types of parents.

Alongside these theoretical debates about the foundations of parent-child ties, an oft-voiced concern is selection into different types of parents (Ganong and Coleman 1994; Kim 2011; McLanahan, Tach, and Schneider 2013). Researchers argue that it is not biological relatedness that matters, or the marriage between a mother and father, but rather the types of individuals who represent different partnership statuses and parental roles (Evenhouse and Reilly 2004; Gratz 2017; Hofferth and Anderson 2003). The underlying argument is that some parents have traits that have negative implications for the development of strong and secure relationships with their children. If such traits also affect the risk of divorce, differences in the quality of parent-child ties between types of parents may well be spurious. This criticism is common among economists who analyze family issues (Gennetian 2005; Ginther and Pollak 2004), and has been around for decades, as can be seen in the controversies that arose about publications on stepfather violence toward stepchildren (Daly and Wilson 1988).

Currently available data have not allowed researchers to examine these debates simultaneously and with sufficient statistical power. Questions about the difference between married and divorced parents and questions about biological and stepparents have thus far been examined in different streams of the literature. For example, studies on the effect of divorce and separation on parent-child ties often compare types of parents in parallel samples (e.g., divorced versus still married fathers, see Albertini and Garriga 2011; Aquilino 2006; de Graaf and Fokkema 2007; Lin 2008). This approach does not properly account for selection factors. Studies on the importance of biology face similar challenges. Studies have compared stepparents and biological parents within children (King 2007) and adopted and biological children within parents (Anderson et al. 1999; Davey, Eggebeen, and Savla 2007; Henretta, van Voorhis, and Soldo 2014; Killian 2008), but this work does not account for selection factors. A few studies utilize family, parent, or child fixed-effect models to examine the association between biological relatedness and parent-child ties, while controlling for selection factors (Berry 2008; Evenhouse and Reilly 2004; Schnettler and Steinbach 2011). Two studies have estimated the stepgap—that is, the difference in relationship strength between biological parents and their children and stepparents and their children—while controlling for the length of coresidence between (step)parent and child (Arránz Becker et al. 2013; Kalmijn 2013).

For this article, we designed and collected a new survey to bring together these separate streams of research. We examine the roles that biology, partnership, *and* coresidence play in determining parents' provision of support to adult children, the frequency of intergenerational contact, and the self-reported closeness between a parent and an adult child. The new survey used a register-based oversample of adult children who grew up in nonstandard families and collected data on children, their parents, and their stepparents. Adult children were asked to report on all their parent figures, and parents were asked to report on all their children. As we will discuss in detail, this "double multi-actor design" allows for two types of comparisons. First, we can use a multiple-child design where we compare the strength of relationships to different types of children *within* each parent. This controls for unobservable parent characteristics. Second, we can use a multiple-parent design where the strength of relationships to different types of parents is compared *within* a child. This implicitly controls for the influence of unobservable child characteristics. By applying a double multi-actor design, we are better able to control for negative selection into divorce and remarriage, which is one of the more prominent sources of uncertainty in the causal interpretation of divorce (and stepfamily) effects (McLanahan et al. 2013). Although we take a step forward compared to previous studies, there are also limitations to our design, which prevent us from making true causal claims. A final noteworthy aspect of our survey is the supplementary data collection among a representative sample of *adult* adopted children who reported on their relations with their adoptive parents. This subsample allows for further examination of the propositions put forward by the primacy of biology thesis.

A substantive novelty of our research lies in the focus on adulthood. Many studies have examined relationships in nonstandard families, such as divorced families and stepfamilies, but most of these focus on younger children who may be in the midst of family restructuring (King 2007, 2009; Sweeney 2010). And although many studies examine adult intergenerational relationships, in particular in the field of ageing (Silverstein et al. 2010; Szydlik 2016), research on the long-term repercussions of family complexity for parent-child ties is still in its infancy (van der Pas, van Tilburg, and Silverstein 2013). Although we do not directly compare children over time as they become adults, a shift in focus to later outcomes is important. Examining adult children who live independently allows for a clearer view of the actual importance of biology, partnership, and coresidence, as they are past the period of initial turmoil and household reorganization (Stewart 2007).

Our study aims to unravel general theoretical mechanisms but uses data from one national context, the Netherlands, and one cohort, children born in the 1970s and 1980s. Like most other Western societies, the Netherlands experienced a rapid increase in the divorce rate since the 1960s. The proportion of 15-year-olds not living with both biological parents increased to 30 percent in the past 20 years (CBS 2018). The weak position of the father-child tie after divorce is similar to that in other Western European countries, although there have been improvements over time in this respect (Poortman and van Gaalen 2017). In terms of intergenerational contact and support, the Netherlands is representative of Western Europe (Hank 2007). The people we study—children born in the 1970s and 1980s—were the first cohort in the Netherlands who experienced the divorce revolution while growing up.

THEORY AND HYPOTHESES

Several explanations have been given for why parent-child ties are one of the strongest relationships that exist in human society. Following earlier studies, we conceptualize the strength of these ties in terms of the frequency of contact, the perceived degree of closeness, and the amount of intergenerational support. These are generally considered fundamental indicators of the strength of (adult) parent-child relationships because they are elements of intergenerational exchange as well as aspects of the relationship that facilitate exchange (Hank 2007; Silverstein et al. 2010; Swartz 2009). Whereas contact frequency and support are behavioral measures, closeness is a personal evaluation. Another difference is that contact and support are sometimes couple-oriented, whereas closeness is purely individual.

To explain the strength of intergenerational ties, evolutionary psychologists have argued that biology forms the basis of parent-child ties (Buss 2016; Daly and Wilson 2000). According to parental investment theory, there is an evolutionary advantage in helping biological children, and no advantage in helping other types of children (Gibson 2009; Trivers 1972). People increase the survival chances of their genes not only by having biological children (direct fitness), but also by taking care of them so these children can, in turn, reproduce (indirect fitness). Additionally, sociologists have argued that favoritism of biological children has a normative component due to the symbolic meaning of blood ties. For example, normative obligations to support stepfamily members are weaker and more context-dependent than are normative obligations toward biological family members (Ganong and Coleman 1998, 2006a, 2006b; van Houdt et al. 2018), reflecting a pattern of "incomplete institutionalization" of stepfamilies (Cherlin 1978). Both of these considerations, evolutionary and normative, imply that when focusing on the repercussions of family complexity for parent-child ties, a "step penalty" will be observed where "step ties" are weaker than biological parent-child ties.

Adoptive families provide an additional context to elaborate on this mechanism. As with stepparents, adoptive ties are not based on biological relatedness but formed through "social parenting." Theoretical arguments on normative ambiguities or evolutionary predispositions are therefore also applicable to adoptive intergenerational ties. In contrast to stepfamily ties, however, adoptive social parenting does not occur in a setting of instability and conflict that can characterize divorce and remarriage. A comparison between biological and adoptive ties is another test of the advantage of biology, without the comparison potentially being colored by a history of parental partnership instability. We need to acknowledge, however, the possible compensation that might be observed in non-biological parents' behaviors toward children. This argument is primarily put forward when discussing adoptive parents and suggests that, in a potential attempt to prove themselves as "good parents," adoptive parents might invest even more rather than less in their children (Hamilton et al. 2007; Hartman and Laird 1990). Yet, the possible positive compensation effect of social parenthood on the parent-child tie might be present only for adoptive parents and not stepparents, who have to coexist alongside two biological parents and thus may not be expected to perform the role of a "real" parent. We expect that non-biological or "social" ties are weaker in comparison to the ties between parents and children who are biologically related (*advantage of biology hypothesis*), with the qualification that this difference might be more pronounced when examining step- than adoptive parents.

A second theory argues that it is the bond between two parents that makes the parent-child tie strong. This can be especially clear in the case of divorce when the issue of conflicting loyalties arises. Studies show that children of divorced parents experience an amplified sense of conflicting loyalties between parents (Amato and Afifi 2006; Buchanan, Maccoby, and Dornbusch 1991) and correspondingly have a lower relationship quality with their parents (Booth and Amato 1994). This occurs more often when there is conflict between the parents, but most divorces, especially those involving children, are plagued with interparental conflict, both during the last months/years of a marriage and after the divorce (Fischer, de Graaf, and Kalmijn 2005). Furthermore, a child's difficulty in choosing between parents is not only emotional but also practical. Visiting two parents separately is more costly than visiting two parents together. In fact, this issue might be even more relevant in our case, as adults have more freedom to decide on the allocation of their time between potentially competing parental households. The conflicting loyalties argument does not predict which parent will be favored, but on average, relationships with both the mother and the father will be weaker as a result. In summary, we expect to observe a partnership premium where the tie between a parent and a child is stronger when the parents are still together than when the parental tie is interrupted via a divorce or separation (*partnership premium hypothesis*).

Another reason why the parent-child tie might be strengthened by the union between parents lies in the notion of kinkeeping (Di Leonardo 1987; Hagestad 1986; Kalmijn 2007; Rosenthal 1985). Kinkeeping can be defined as "the conception, maintenance, and ritual celebration of cross-household kin ties, including visits, letters, telephone calls, presents, and cards to kin; the organization of holiday gatherings; [and] the creation and maintenance of (quasi-)kin relations" (Di Leonardo 1987:442). In most family systems, it is typically the woman who engages most in kinkeeping. It is therefore easier for married men to maintain ties to their adult children because they benefit from the kinkeeping efforts of their wife. If married fathers divorce, they lose not only a partner but also a kinkeeper. Importantly, this pattern applies to both divorced and widowed fathers (Kalmijn 2007; Lin 2008). Therefore, we expect that the partnership premium is stronger for fathers than for mothers (*hypothesis of gendered partnership premium*).

The notion of kinkeeping has important repercussions for the advantage of biology. The fact that mothers are the traditional kinkeepers, more so than fathers, has vital implications for the ties between children and parents' new partners. As previously discussed, being partnered with the kinkeeper of a family system has important benefits for the father-child tie. An important clarification here is that although the role of kinkeeper is generally performed by women (and thus something stepmothers might do too), one cannot ignore the culturally constructed and de facto primacy of the biological mother-child tie within a family system (Doodson and Davies 2014; Weaver and Coleman 2010). In other words, as far as relations with children are concerned, the person most likely to serve as a facilitator of their ties with others is the original mother. As a result of partnership with a biological mother, a stepfather's relationship with *her* children may be relatively strong. The stepmother, in contrast, does not have such a kinkeeper who could connect her to her partner's children, so her ties to her stepchildren might be relatively weak (Lindenauer 2014). Thus, we expect that the previously hypothesized advantage of biology will be stronger for mothers than for fathers (*hypothesis of gendered advantage of biology*).

An important alternative to the theories about biology and partnership argues that coresidence is the basis of parent-child ties; this understanding is based on sociological notions of exchange and reciprocity (Silverstein et al. 2002), as well as psychological notions of attachment (Ainsworth 1989). These perspectives argue that time is a crucial factor: the longer parents invest in their children's well-being (which is facilitated by coresidence), the stronger the attachment between the child and parent becomes, and in turn, the stronger the parent-child tie is when the child reaches adulthood. Obviously, the length of shared residence is not a direct measure of parental investments, but when parents and children share a longer part of their life together in a household, this does provide more opportunities to develop the relationship. Both theories imply that nonbiological ties to an adult can become a secure basis for attachment (Hamilton et al. 2007). The coresidence hypothesis provides a fundamental alternative to the hypothesis of biological advantage: adult ties to parents with whom the child lived when growing up are stronger than ties to parents with whom the child did not live; similarly, the longer a child lived with a parent, the stronger the tie to that parent in adulthood. These are not new ideas, but to date, no work has examined how coresidence and duration affect the advantage of biology and the partnership premium. Because it is the magnitude of the investments that matters for later returns, and not so much who makes them or under what partnership circumstances, we expect that both the advantage of biology and the partnership premium in intergenerational relations will be reduced once we account for the length of coresidence with a child. In other words, coresidence should mediate the advantage of biology and the partnership premium (*coresidence hypothesis*).

COMPARATIVE LOGIC AND DESIGN

This article develops a double multi-actor design to test the hypotheses about biology, partnership, and coresidence. Before we discuss the data and measures in detail, it is important to explain the design in substantive terms. We have data on parents who report on different types of children (biological children from a current union, biological children from a union dissolved by divorce or widowhood, and stepchildren). We also have data on adult children who report on multiple parent figures (married parents, divorced parents, widowed parents, stepparents, and adoptive parents). In each dataset, this creates a multilevel structure that can be analyzed using random- and fixed-effects models (Petersen 2004).

The random-effects models yield two comparisons that are relevant for testing the advantage of biology: (a) differences between stepparent-stepchild relationships and biological parent-child relationships, and (b) differences between adopted parent-child relationships and biological parent-child relationships. Because adopted relationships do not typically involve family instability and interparental conflict, this is an attractive additional way to address the role of biology (Hamilton et al. 2007). Of course, other issues may be at play, as research shows that adoptive relationships are strained by adopted children's problems of identity (Gibson 2009; Kohler, Grotevant, and McRoy 2002). Yet such issues do not necessarily contradict our hypothesis, as these identity problems are strongly related to society's normative emphasis on biological parenting. Note, however, that even the adopted parent-child relationship is not a perfect natural experiment. For example, personality is heritable, and the absence of a common genetic influence on personality traits might weaken the relationship. Nevertheless, the comparison between adoptive parent-child relationships and biological parent-child relationships offers a unique opportunity to test our hypotheses on the advantage of biology outside the context of the divorced sample.

The random-effects models also yield two comparisons for testing the partnership premium: (c) differences between children's relationships with divorced parents and children's relationships with married parents, and (d) differences between children's relationships with widowed parents and children's relationships with married parents. The case of widowhood is important in that it provides a case of partnership dissolution without conflict and is therefore a more direct way to look at the role of kinkeeping, which is one of the presumed mechanisms behind the gendered partnership premium. In fact, widowhood at a young age has traditionally been seen as an alternative and more direct way to assess the effects of father absence (Kalmijn 2007; McLanahan et al. 2013).

In all comparisons, differences can be adjusted for whether and how long the parent and child lived together, thereby partialling out the mediating role of coresidence. By comparing the effects with and without adjusting for coresidence, we obtain a test of our coresidence hypothesis.

Via the use of fixed-effects models, we are able to provide extra tests of the hypotheses. The parent data offer comparisons of multiple children *within parents* (i.e., a multiple child design). For example, a parent can have a shared biological child in a current union in combination with a stepchild, which yields a test of the step effect. Similarly, a parent can have biological children from a current union and biological children from a previous dissolved union, which provides a test of the partnership premium. The child data offer comparisons of multiple parents *within children* (i.e., a multiple parent design). Specifically, we can compare stepparents to divorced parents within a child. By comparing these parents, we obtain an estimate of the strength of the partnership premium *minus* the strength of the biology advantage. Comparisons between divorced and married biological parents of the same child are logically impossible in the multiple parent design.

The main advantage of the fixed-effects approach is that it provides a better—albeit not conclusive—way to account for selection bias: we are able to control for potential heterogeneity in unobserved child and parent traits. For example, fathers or mothers who divorce may have a more problematic personality, and this could affect how well they are able to develop personal relationships. If we compare different types of children of that parent, this selection variable is implicitly held constant. Similarly, if children of divorced parents have prior mental health problems, this will affect their relationships with biological parents and stepparents but not the difference between them. To some extent, the fixed-effects approach also controls for the circumstances that parents and children have faced during their lives. For example, a daughter can be traumatized by interparental conflict, but when we compare the ties she has to her stepfather and her biological father, such trauma should not affect the difference between these ties. Likewise, by comparing the different types of children a divorced mother may have, the difference will not be affected by the negative emotional effects the divorce may have had on her.

Note that our design does not account for all relevant parent and child characteristics or circumstances, especially not time-varying traits or circumstances that emerge during the child's or parent's life. For example, a divorced father who remarries may change his lifestyle or gain interpersonal skills that may be more beneficial to his new children than his old children. Such changes will affect different parent-child ties differently, but they cannot be captured by our fixed-effects design. Still, our design is a step forward in that it addresses some of the more relevant selection variables that have been mentioned in the debate on the causal nature of divorce and stepfamily effects (McLanahan et al. 2013).

DATA, MEASURES, AND MODELS

Data

We use a survey called OKiN that was designed to answer questions about family complexity (Kalmijn et al. 2018).[1] The OKiN has two samples: a sample of adult children age 25 to 45, and a sample of their parent figures. The sampling frame for the adult children was based on the Dutch population register (Bakker, van Rooijen, and van Toor 2014; Prins 2017). A systematic oversample was created based on whom the respondents lived with when they were 15 years old. Three sampling strata were defined: (a) intact family (both parents, as listed on the birth certificate, were present in the household; 25 percent); (b) non-intact family without new partner (only one biological parent present in the household, no partner registered in the household; 33 percent); and (c) non-intact family with new partner (only one biological parent present in the household, with a partner registered as living in the household; 42 percent).

The sample of parent figures was derived from the adult-child sample. We selected the biological parents (if alive) and their *current* partners (i.e., partners registered in the household at the time the sample was drawn). Hence, in the case of divorced biological parents, there can be up to four parental figures for each adult child. The parent figures were approached directly and independently of their children to avoid the well-known problem of selective nonresponse of secondary respondents (Kalmijn and Liefbroer 2011). The relative sizes of the sampling strata in the parent sample are a product of the sampling strata in the adult-child sample, but it is clear that this sampling strategy also indirectly yields an oversample of nonstandard parents.

The fieldwork was done by Statistics Netherlands in 2017. Adult children received an introduction letter inviting them to participate using an online link (Computer-Assisted Web Interviewing, CAWI). All adult children received an incentive beforehand, regardless of participation, and nonrespondents received several reminders. If they did not respond a month after the last letter, they were approached for a face-to-face Computer-Assisted Personal Interviewing (CAPI) interview. The fieldwork for parents started in the same way: a letter with an invitation to participate in a CAWI survey. Nonrespondents received a reminder to participate in the CAWI survey and later received a paper version of the questionnaire (PAPI). For the adult-child survey, the response rate was 62 percent (N = 6,485 adult children), which is above average for the Netherlands. For the parent survey, the response rate was 38 percent ($N = 9{,}325$ parents). The lower response of parents is due to the lack of an unconditional incentive and the absence of a face-to-face follow-up stage.[2] Because of the large sample size and the oversampling strategy, we have unprecedented numbers of children with stepparents ($n = 2{,}567$ in the adult-child sample) and children with divorced parents ($n = 5{,}762$).[3]

One year after the initial data collection, an extra data collection was conducted to add a subsample of adopted (adult) children to the OKiN dataset. Whether someone is adopted is not recorded in the registers, so we used an indirect sampling strategy to target adult adopted children. We defined the sampling frame as respondents (1) with two parents who were born in the Netherlands, (2) who were themselves born in one of the most common non-European countries to adopt children from at that time, and (3) who arrived in the Netherlands before they were 4 years old. Just as in the main OKiN sample, the anchors had to be born between 1971 and 1991. The approach of the respondents was the same as in the original sample, except there was no face-to-face or paper-and-pencil follow-up if respondents did not participate. Moreover, the parents of the adopted sample (alters) were not approached. A total of 282 respondents participated in the survey and 268 confirmed they were adopted, showing that our indirect sampling strategy was effective. Although the response rate was low (28 percent), given the special nature of the sample and the lack of a face-to-face follow-up, we regard this as acceptable. Nevertheless, we present the estimates with some caution.

Measurement

Defining parent-child dyads. Parent-child dyads are the units of analysis in both datasets. The following types of dyads were constructed in a parallel fashion in the two datasets:

(a) Married dyad: in the child data, this means the respondent's biological parents stayed together during the respondent's youth; in the parent data, it means the adult child is a shared biological child of the parent and the parent's *current* partner.
(b) Step dyad: in the child data, this means the parent is a new partner of the biological parent from youth until the present day, regardless of whether the parent lived with the child; in the parent data, it means the adult child is a child from a previous union of the current partner.
(c) Divorced dyad: in the child data, this means the biological parents divorced or separated before the respondent turned 18; for the parent data, it means the adult child is from a prior, dissolved partnership during the child's youth.
(d) Widowed dyad: in the child data, this means one of the child's biological parents died before the child was 18; in the parent data, it means the partner who was the other biological parent of the child died during the child's youth.
(e) Adopted dyad: in the child data, this means the child was adopted by two married parents who remained married (adopted dyads are not presented in the parent data).

In all cases, the dyad must have existed during the child's youth. In the parent data, information is available on a maximum of two (randomly chosen) children for each type of child (i.e., two stepchildren, two biological children from a current union, and two biological children from a previous union). We include a control variable for the distinction between marriage and cohabitation. In the United States, this would be a major determinant of how couples and parents function (Carlson et al. 2004). In Western and Northern Europe, cohabitation with a child is also common, but the instability of such unions is lower than in the United States (Thomson 2014). We exclude divorced stepparents from the analysis because children had virtually no contact with them.

Dependent variables. Contact is measured as the frequency of face-to-face and telephone contact, in six frequency categories. To facilitate the estimation, we recoded these to percentile scores based on the full sample.

In the parent data, telephone contact and face-to-face contact were combined in one question; in the child data, these were separate questions and were averaged. We experimented with other often-used coding schemes for contact, but these were highly correlated to the percentile scores and the percentile scores are less arbitrary.

Closeness is measured on a five-point scale, ranging from 1 (not close at all) to 5 (very close). This was treated as an interval variable following earlier studies on closeness (King 2006).

Intergenerational support was measured as an index containing four types of support provided by the parent to the child: help with practical matters, help with household tasks, help with taking care of children (if applicable), and appraisal support (i.e., giving advice).[4] Support transfers were assessed for each parent separately, regardless of whether a parent provided the support together with a spouse or individually. The four types of support cover two dimensions, practical and emotional support, as distinguished in the literature on intergenerational solidarity (Silverstein and Bengtson 1997; Swartz 2009). We do not use the third dimension, financial support, in this article, as the data show that financial transfers are more often provided jointly by parent couples than individually, which does not match our dyadic approach. The types of support were assessed separately in the questionnaire and combined in one index, counting the number of types of support provided by the parent. The variable ranges from 0 to 4 (the number of types of support) and is supposed to measure how broadly parents are involved in supporting their children. We experimented with scales that also account for the frequency of support, but given that these frequencies are relatively low, the results were similar. The reliability of the index, as measured by Loevinger's H for dichotomous items, is .50 for the child data and .47 for the parent data. These can be considered as good and adequate, respectively (van Schuur 2003). We note that reliability coefficients need not be very high when behavioral measures are combined in an index (Streiner 2003). Analyses that combine different types of support, comparable to those in our data, in one measure can be found in Kohli and Künemund (2003) and Wiemers and colleagues (2019).

Coresidence and duration. The measures of duration are based on a complete life-history module in which children and parents were asked to report with which (step)parents or (step)children they lived together in a household and at what ages (of the children). For divorced parents, children could report multiple episodes of coresidence with the parent. For episodes in which a child did not live with a parent, children reported how often they had contact with that parent. We use this latter measure (which is only available in the child data) to improve the measure of coresidence for the nonresident parent.[5] For adoptive parents, we use the age at entry into the family. All durations refer to the period until the child leaves home or is 18 years of age (whatever comes first). We include duration squared to allow for nonlinear effects.

Control variables. We include a number of control variables that are known to affect intergenerational ties and that may be correlated with marital status (Swartz 2009; Szydlik 2016). We only include variables that are (temporally) prior to changes in parents' marital status. For example, the child's level of education affects the amount of face-to-face contact with parents, but it is also affected by parental divorce and is therefore not used as a control. We include the age of the parent and the child at data collection, the sex of the parent and the child, whether or not the dyad refers to a marriage or a cohabiting union of the parents, the educational level of the parent (coded in ISLED; Schröder and Ganzeboom 2014), and perceived poverty status in youth, measured by a question about how difficult it was to make ends meet (on a five-point scale).[6] We also include the number of siblings/children (including step- and half-siblings), because contact tends to be less frequent at the dyadic level when families are larger (Grundy and Read 2012), and we control for

Table 1. Descriptive Statistics of Variables at the Dyad Level

	Mean	SD	Min.	Max.	Count
Parent Data					
Closeness (y1)	3.68	1.21	1	5	14,397
Contact (rank) (y2)	.46	.28	.03	.87	14,390
Intergenerational support (y3)	1.98	1.19	0	4	14,390
Father vs. mother	.53	.50	0	1	14,431
Step	.35	.48	0	1	14,431
Divorced	.53	.50	0	1	14,431
Widowed	.05	.21	0	1	14,431
Duration	11.69	6.82	0	18	14,329
Any coresidence	.90	.30	0	1	14,410
Number of children	3.55	1.43	1	10	14,286
Youth poverty	2.57	.83	1	5	14,431
Parent education (*z*)	.07	.98	−1.60	1.58	14,418
Child age	32.88	5.24	25	45	14,431
Parent age	60.88	6.35	18	86	14,431
Daughter vs. son	.49	.50	0	1	14,431
Cohabitation vs. marriage	.09	.29	0	1	14,429
Grandchildren	.48	.50	0	1	14,394
Adult-Child Data					
Closeness (y1)	3.85	1.03	1	5	11,741
Contact (rank) (y2)	.63	.24	.07	.91	11,904
Intergenerational support (y3)	1.96	1.17	0	4	11,904
Father vs. mother	.50	.50	0	1	12,255
Step	.05	.23	0	1	12,255
Divorced	.15	.36	0	1	12,255
Widowed	.02	.13	0	1	12,255
Step vs. divorced	.26	.44	0	1	8,700
Duration	16.55	4.06	0	18	12,249
Coresidence	.98	.15	0	1	12,255
Number of siblings	2.03	1.59	0	10	12,255
Youth poverty	2.33	.86	1	5	12,255
Parents' education (*z*)	−.03	.98	−1.54	2.31	11,257
Child age	33.74	5.57	25	46	12,255
Parent age	63.14	6.79	34	98	12,255
Daughter vs. son	.48	.50	0	1	12,255
Cohabitation	.04	.21	0	1	12,255
Grandchildren	.54	.50	0	1	12,255

Note: In the models, duration − 10 is used and the dependent variables are standardized. Missing values of education and sibsize are imputed. Means and SDs are weighted (in parent data, weights are based on the sampling weights of the child data). Adopted children are not included in statistics on children ($n = 389$).

whether the adult child has children, because the support scale includes parental support with childcare (grandparenting). Table 1 presents means and standard deviations of all variables. Statistics in this table were weighted to adjust for the oversample of nonstandard families.

There has been a debate in the divorce literature about the role of interparental conflict (Fischer et al. 2005; Sobolewski and King 2005). Studies show, for example, that the negative effects of parental divorce on children's outcomes and children's relationships with their parents are due, to a large extent, to the conflicts parents had with each other. In one rather strict interpretation of this research, scholars argue that the divorce effect is therefore spurious. This is an important debate, but we disagree with this interpretation. Parental divorce and parental conflict are very highly correlated (in our data, Cohen's $d = 1.09$), and it is difficult to conceptually separate these dimensions.[7] We regard conflict as integral to divorce and see it as a package to which children are exposed. Divorce is a process in which considerations around separation, and interparental conflict, mutually reinforce each other. We therefore decided to not control for the amount of conflict between parents in the main analyses, but to present additional results with and without controlling for conflict in an online supplement. Note that we do not have measures of conflict between the parent and the new partner—only between the original biological parents—so a treatment of conflict in the main analyses would be asymmetric.

Models

We estimate random- and fixed-effects regression models where parents are nested in children and vice versa. All our models include a series of dichotomous variables to estimate differences in relationship quality between types of dyads. We include the following effects, each time using married/cohabiting parents as a reference: (a) the effect of a stepparent, (b) the effect of an adoptive parent, (c) the effect of a divorced parent, and (d) the effect of a widowed parent. In an extra specification, we present the contrast between a stepparent and a divorced parent (c versus a), as discussed earlier in the design section. The coefficients of the binary variables can be interpreted as effect sizes (Cohen's *d*) because the outcome variables were standardized. In all models, we include interactions with the gender of the parent to test our ideas about the gender-specific effects of biology and partnership.

We estimate the various contrasts in three steps. We start with a random-effects model without controlling for the length of coresidence but including our basic set of control variables (Model 1). Next, we add our measures of coresidence and duration to the model (Model 2). Finally, we estimate the fixed-effects model (Model 3), which contains our preferred estimates of the differences between dyads. By comparing a specific contrast (e.g., between married and divorced parents) between Models 1 and 2, we see to what extent coresidence explains the difference. We test this change using the KHB module for estimating indirect effects in Stata (Kohler, Karlson, and Holm 2011).

The full regression results are presented in Table 3 for the parent data and Table 4 for the child data. Because we include interaction effects by gender, the main effects apply to mothers and the interactions inform us if effects are stronger or weaker for fathers than for mothers. Because of the complexity of these models, we summarize all relevant contrasts for fathers and mothers separately, as implied by the interactions from the regression models in Tables 5 and 6. These tables correspond with Tables 3 and 4 but provide extra information in that they also show what the (implied) effects are for fathers. In discussing the results, we therefore rely on Tables 5 and 6. To illustrate the findings, we present the results for one outcome (contact) and one data source (parents) in Figure 1.

Finally, note that all our results are unweighted. The descriptive tables present data separately for different types of parents, so the oversample does not need to be corrected. The sampling weights are a direct function of the independent variables, so there is no need to use weights in the regression models (Winship and Radbill 1994). Also note that although the population of children is clearly defined, because this is a (stratified) random sample from the entire population, the population of parents is more complex because it is not a sample of parents but a derivative sample of the child sample.

RESULTS

Descriptive Results

Table 2 gives an overview of the types of dyads and summary statistics of coresidence and

Table 2. Types of Parents and Coresidence Summary Measures in Adult-Child and Parent Data

	Adult-Child Data			Parent Data		
	Coresidence					
	Prop. Coresidence		*N*	Prop. Coresidence		*N*
Stepfathers	.916		1,386	.912		1,739
Stepmothers	.440		1,313	.439		1,775
	Duration Coresidence					
	M	SD	*N*	M	SD	*N*
Married biological fathers	17.88	.98	1,529	17.88	.99	1,786
Married biological mothers	17.90	.73	1,525	17.88	.98	1,850
Divorced biological fathers	9.02	5.15	3,039	11.41	5.82	2,872
Divorced biological mothers	16.76	2.79	2,956	17.16	2.53	3,721
Stepfathers	7.07	4.56	1,386	7.68	4.92	1,705
Stepmothers	2.40	3.78	1,313	2.52	4.12	1,769
Widowed fathers	17.60	1.51	180	17.14	2.80	242
Widowed mothers	17.80	1.08	321	17.60	1.91	384
Adoptive fathers	17.15	1.29	194			
Adoptive mothers	17.16	1.29	195			

Note: Duration in this table is without post-divorce contact. Unweighted statistics.

duration variables. We see several important although not unexpected patterns: (a) stepfathers have more shared history with children than do stepmothers, (b) divorced mothers have more history with their children than do divorced fathers, and (c) the variance in residence is limited for married parents. This variance comes from differences in the age of the children when they leave home. We also observe new patterns: (a) we see considerable variance in the duration variables for all nonstandard parents and for divorced biological mothers, and (b) divorced fathers, on average, live longer with a child than do stepfathers. Overall, the child and parent data appear quite similar in terms of these basic but important characteristics. One difference is that the average duration of coresidence for divorced fathers is somewhat longer in the parent data than in the child data. This may be due to higher nonresponse among divorced fathers who left early in the child's life.

Regression Results

Before we turn to a discussion of the contrasts between types of dyads, we discuss the effects of coresidence and duration. Tables 3 and 4 show there are positive effects of any coresidence versus no coresidence at all, and, on top of this, there are positive and slightly nonlinear effects of the length of residence. Duration is centered around year 10, so the main effect of duration applies to the slope at 10 years. One extra year of coresidence is associated with a .04 standard deviation increase in closeness in the child data and a .056 increase in closeness in the parent data. This shows the duration effects are quite strong.

Testing the Advantage of Biology

We start with the results pertaining to the hypothesized advantage of biology, using the parent data first. The random-effects models without duration show that mothers have weaker ties to stepchildren than to biological children (Table 5, Model 1). This applies to all three outcomes. The step effect for mothers varies from −1.22 to −.88, which can be considered large. The step effect is weaker for fathers but is still negative. The difference between the step effect for fathers and mothers is significant.

Table 3. Random- and Fixed-Effects Regression of Parent-Child Relationships: Parent Data on Multiple Children per Parent

	Closeness			Contact			Support		
	Model 1 RE	Model 2 RE	Model 3 FE[a]	Model 1 RE	Model 2 RE	Model 3 FE[a]	Model 1 RE	Model 2 RE	Model 3 FE[a]
Father vs. mother	–.114**	–.121		–.118**	–.097		–.035	.053	
	(.021)	(.110)		(.024)	(.098)		(.025)	(.101)	
Step	–1.222**	–.445**	–.639**	–1.205**	–.434**	–.667**	–.881**	–.270**	–.526**
	(.035)	(.056)	(.106)	(.034)	(.054)	(.108)	(.035)	(.055)	(.112)
x father	.753**	.466**	.557**	.758**	.457**	.588**	.631**	.366**	.490**
	(.044)	(.051)	(.109)	(.043)	(.051)	(.106)	(.042)	(.051)	(.103)
Divorced	–.063*	–.027	–.050	–.208**	–.172**	–.274**	–.117**	–.090**	–.187
	(.025)	(.024)	(.089)	(.028)	(.027)	(.088)	(.029)	(.029)	(.099)
x father	–.531**	–.264**	–.391**	–.576**	–.325**	–.347**	–.468**	–.284**	–.383**
	(.037)	(.040)	(.112)	(.036)	(.039)	(.104)	(.036)	(.038)	(.100)
Widowed	–.060	–.041	–.090	–.168**	–.148**	–.258	–.140*	–.123*	–.215
	(.053)	(.052)	(.164)	(.054)	(.054)	(.137)	(.055)	(.055)	(.140)
x father	–.152	–.137	–.196	–.191*	–.179*	–.161	–.092	–.086	–.181
	(.082)	(.082)	(.203)	(.092)	(.090)	(.210)	(.080)	(.080)	(.179)
Duration (–10)		.040**	.036**		.036**	.031**		.025**	.020**
		(.003)	(.004)		(.002)	(.004)		(.002)	(.003)
Duration squared		.002**	.001		.002**	.002**		.002**	.001*
		(.000)	(.001)		(.000)	(.001)		(.000)	(.001)
Any coresidence		.308**	.298**		.426**	.419**		.424**	.405**
		(.060)	(.078)		(.051)	(.069)		(.053)	(.068)
x father		.010	–.074		–.018	–.042		–.086	–.087
		(.108)	(.152)		(.096)	(.140)		(.098)	(.141)
Number of children	–.010	–.009		–.056**	–.055**		–.036**	–.035**	
	(.172)	(.198)		(.000)	(.000)		(.000)	(.000)	
Youth poverty	–.052**	–.051**		–.022	–.021		–.014	–.014	
	(.000)	(.000)		(.079)	(.078)		(.249)	(.247)	
Parent education (z)	.018	.014		–.044**	–.048**		.106**	.102**	
	(.081)	(.174)		(.000)	(.000)		(.000)	(.000)	

(continued)

Table 3. *(continued)*

	Closeness			Contact			Support		
	Model 1 RE	Model 2 RE	Model 3 FE[a]	Model 1 RE	Model 2 RE	Model 3 FE[a]	Model 1 RE	Model 2 RE	Model 3 FE[a]
Child age	−.011**	−.010**	−.013**	−.012**	−.011**	−.012**	−.028**	−.027**	−.025**
	(.000)	(.000)	(.001)	(.000)	(.000)	(.001)	(.000)	(.000)	(.000)
Parent age	.008**	.008**		−.003	−.003		−.002	−.002	
	(.000)	(.000)		(.164)	(.142)		(.437)	(.411)	
Daughter vs. son	.154**	.163**	.186**	.218**	.226**	.270**	.135**	.143**	.168**
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Cohabitation	−.031	−.019	−.006	−.019	−.007	−.033	−.046	−.037	−.029
	(.330)	(.551)	(.931)	(.539)	(.802)	(.572)	(.138)	(.217)	(.610)
Grandchildren							.720**	.714**	.723**
							(.000)	(.000)	(.000)
Kids	14,275	14,275	14,275	14,268	14,268	14,268	14,257	14,257	14,257
Parents	7,390	7,390	7,390	7,383	7,383	7,383	7,381	7,381	7,381
R^2 within	.196	.219	.221	.182	.205	.206	.257	.270	.272
R^2 between	.164	.198	.187	.200	.232	.211	.194	.215	.193

Note: Standard errors in parentheses. Reference category is married parents. Duration centered around 10. RE = random effects; FE = fixed effects.
[a]There are 1,047 parents who have at least one stepchild and one or more previous children, 146 parents who have at least one stepchild and at least one new child, and 129 parents who have at least one previous child and one or more new children.
*$p < .05$; **$p < .01$ (two-tailed tests).

Table 4. Random- and Fixed-Effects Regression of Parent-Child Closeness and Contact (z-Scores): Adult-Child Data on Multiple Parents per Child

	Closeness			Contact			Support		
	Model 1 RE	Model 2 RE	Model 3 FE[a]	Model 1 RE	Model 2 RE	Model 3 FE[a]	Model 1 RE	Model 2 RE	Model 3 FE[a]
Father vs. mother	–.160**	–.127	–.276*	–.282**	–.297**	–.474**	–.090**	–.081	–.263*
	(.029)	(.098)	(.126)	(.026)	(.090)	(.112)	(.026)	(.092)	(.111)
Step	–1.167**	–.138*		–1.345**	–.303**		–1.082**	–.233**	
	(.037)	(.054)		(.035)	(.050)		(.036)	(.052)	
x father	.756**	.461**		.880**	.561**		.647**	.395**	
	(.043)	(.050)		(.039)	(.046)		(.040)	(.047)	
Adoption	–.300**	–.212**		–.344**	–.261**		–.190**	–.121	
	(.070)	(.068)		(.067)	(.065)		(.069)	(.068)	
x father	.107	.106		.090	.089		–.007	–.008	
	(.084)	(.081)		(.077)	(.073)		(.078)	(.075)	
Divorced	–.152**	–.082**		–.186**	–.120**		–.188**	–.134**	
	(.030)	(.029)		(.028)	(.028)		(.029)	(.029)	
x father	–.527**	–.067		–.547**	–.093**		–.507**	–.129**	
	(.035)	(.039)		(.032)	(.036)		(.033)	(.037)	
Widowed	–.056	–.045		–.078	–.068		–.060	–.051	
	(.055)	(.054)		(.053)	(.051)		(.054)	(.053)	
x father	–.263**	–.217*		–.284**	–.221**		–.344**	–.292**	
	(.088)	(.085)		(.083)	(.081)		(.085)	(.083)	
Step vs. divorced			–.146*			–.246**			–.164**
			(.061)			(.055)			(.055)
x father			.600**			.698**			.566**
			(.065)			(.059)			(.058)
Duration (–10)		.056**	.053**		.056**	.054**		.046**	.046**
		(.003)	(.003)		(.002)	(.003)		(.002)	(.003)
Duration squared		.004**	.004**		.003**	.004**		.003**	.004**
		(.000)	(.001)		(.000)	(.000)		(.000)	(.000)

(continued)

Table 4. *(continued)*

	Closeness			Contact			Support		
	Model 1 RE	Model 2 RE	Model 3 FE[a]	Model 1 RE	Model 2 RE	Model 3 FE[a]	Model 1 RE	Model 2 RE	Model 3 FE[a]
Coresidence		.428**	.432**		.423**	.412**		.329**	.329**
		(.056)	(.071)		(.050)	(.062)		(.052)	(.062)
x father		–.031	.046		.018	.107		–.007	.069
		(.094)	(.120)		(.086)	(.107)		(.089)	(.106)
Number of siblings	–.023**	–.019**		–.042**	–.040**		–.031**	–.029**	
	(.005)	(.005)		(.005)	(.005)		(.005)	(.005)	
Youth poverty	–.086**	–.079**		–.076**	–.069**		–.069**	–.063**	
	(.011)	(.011)		(.011)	(.011)		(.012)	(.011)	
Parents' education	.027**	.026**		–.046**	–.047**		.077**	.076**	
(z)	(.010)	(.010)		(.010)	(.010)		(.010)	(.010)	
Child age	–.011**	–.010**		–.010**	–.009**		–.023**	–.022**	
	(.002)	(.002)		(.002)	(.002)		(.003)	(.002)	
Parent age	.004*	.003	.005	.006**	.005**	.005	.004**	.003*	.004
	(.002)	(.002)	(.003)	(.002)	(.002)	(.003)	(.002)	(.002)	(.003)
Daughter vs. son	.106**	.115**		.114**	.124**		.129**	.137**	
	(.019)	(.019)		(.019)	(.019)		(.020)	(.020)	
Cohabitation	–.084**	–.027		–.112**	–.047	–.056	–.074**	–.021	–.023
	(.027)	(.027)		(.026)	(.025)	(.037)	(.026)	(.026)	(.037)
Grandchildren							.399**	.398**	
							(.022)	(.022)	
Parents	12,124	12,124	8,206	12,287	12,287	8,361	12,287	12,287	8,361
Kids	5,269	5,269	3,245	5,274	5,274	3,249	5,274	5,274	3,249
R^2 within	.207	.268	.284	.297	.365	.380	.186	.239	.272
R^2 between	.147	.177	.075	.209	.236	.116	.198	.214	.057

Note: Standard errors in parentheses. Reference category is married parents. Duration centered around 10. RE = random effects; FE = fixed effects.
[a]There are 1,942 children who have at least one stepparent and a divorced parent.
*$p < .05$; **$p < .01$ (two-tailed).

Table 5. Comparisons between Types of Parent-Child Dyads in the Parent Data (N = 7,390 Parents, N = 14,275 Adult Children)

	Closeness			Contact			Support		
	Model 1 RE	Model 2 RE	Model 3 FE	Model 1 RE	Model 2 RE	Model 3 FE	Model 1 RE	Model 2 RE	Model 3 FE
Biology advantage									
Step vs. married[a]	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
Mothers	−1.222*	−.445*#	−.639*	−1.205*	−.434*#	−.667*	−.881*	−.270*#	−.526*
Fathers	−.469*	.021#	−.083	−.447*	.023#	−.078	−.250*	.096#	−.037
Partnership premium									
Divorced vs. married	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
Mothers	−.063*	−.027	−.050	−.208*	−.172*#	−.274*	−.117*	−.090*#	−.187
Fathers	−.594*	−.291*#	−.440*	−.784*	−.497*#	−.620*	−.584*	−.374*#	−.571*
Widowed vs. married				Δ	Δ				
Mothers	−.060	−.041	−.090	−.168*	−.148*	−.258*	−.140*	−.123*	−.215
Fathers	−.211*	−.178*#	−.286*	−.359*	−.326*#	−.419*	−.233*	−.209*	−.396*
Biology advantage vs. partnership premium									
Step vs. divorced	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
Mothers	−1.159*	−.418*	−.599*	−.997*	−.262*	−.393*	−.764*	−.180*	−.339*
Fathers	.125*	.312*	.358*	.337*	.520*	.542*	.335*	.470*	.534*

Note: Based on Table 3. For control variables, see Table 3.
[a]Including cohabitation.
*$p < .05$. Δ Significant gender interaction ($p < .05$). # Significant mediation by coresidence ($p < .05$) (two-tailed tests).

To what extent can we explain the advantage of biology in terms of the more limited opportunities for investing in the child? When we add coresidence and duration to the model, all effects change (Table 5, Model 2). We see that the step effect for mothers is reduced considerably. For example, the step effect on closeness declines by 64 percent between Models 1 and 2. Similar declines occur for contact and support. All these changes are statistically significant, as the mediation tests indicate. Although the remaining step effect for mothers is still negative and significant, these results do show that exposure by itself explains a large part of the gap. Adding duration of coresidence also explains the step effect for fathers, as can be seen from the changes in the effects for fathers. In fact, the remaining step effects for fathers after controlling for duration in Model 2 are negligible and insignificant. Results are similar for the three outcomes. The reduction in effects is stronger for mothers than for fathers, which means coresidence also partly mediates the interaction between gender and biology (see Table 3).

To what extent does selection play a role in the step effect? To see this, we focus on the fixed-effects models (Model 3). The estimates show that the step effects for mothers are somewhat larger in the fixed-effects models than in the random-effects models. If there had been negative selection into stepparenthood, the effects should have become *less* negative. For fathers, the effects hardly change, which indicates there is no negative selection for stepfathers either. After controlling for selection, duration, and coresidence, the coefficients clearly show that the remaining advantage of biology is only present for mothers, not for fathers.

The step effects in the child data are presented at the top of Table 6. These effects tell a similar story. There is a large initial step effect for mothers and a smaller step effect for fathers. A large and significant part of the gap for mothers is due to the fact that stepmothers have less shared time with the child (compare Models 1 and 2), but the remaining effect is still negative (Model 2). For fathers, the gap is explained by coresidence as well, and even reverses, with children having somewhat closer ties to their stepfathers. In the parent data, the remaining step effect for fathers is absent, whereas in the child data it is positive. In both datasets, however, there is strong evidence that the step effect interacts with gender. The interaction effects are similar in the two datasets, as a comparison between the top panels of Tables 3 and 4 makes clear.

The child data allow us to test the role of biology in a second way by comparing biological parents to adoptive parents (in both cases these are intact couples). Table 6 shows negative initial effects of adoption. Adult children feel less close to their adoptive parents, have less contact with them, and receive less support from them, compared to children of married, biological parents. The effects are somewhat stronger for closeness and contact than for support. The negative adoption effect is stronger for mothers than for fathers, similar to the findings for step effects. This difference is not significant, however, and smaller than it was for stepchild-stepparent relationships. When adding coresidence and duration, the adoption effects decline. Hence, part of the gap is due to the fact that adopted children do not spend the same amount of time with their adoptive parents compared to children with married, biological parents. The decline is more modest, however, than for stepparents, which is understandable, as most adopted children live longer with their parents than the average child lives with a stepparent.

Testing the Partnership Premium

We now turn to our partnership hypothesis. We first focus on the role of divorce (and separation) in the parent data (Table 5). We see negative and significant effects of divorce in Model 1 for mothers, showing that divorced mothers have weaker ties to their children than do married mothers. Effects are stronger for contact than for support and closeness, for

Table 6. Comparisons between Types of Parent-Child Dyads in the Child Data (N = 5,269 Adult Children, N = 12,124 Parents)

	Closeness			Contact			Support		
	Model 1 RE	Model 2 RE	Model 3 FE	Model 1 RE	Model 2 RE	Model 3 FE	Model 1 RE	Model 2 RE	Model 3 FE
Biology advantage									
Step vs. married[a]	Δ	Δ		Δ	Δ		Δ	Δ	
Mothers	−1.167*	−.138*#		−1.345*	−.303*#		−1.082*	−.233*#	
Fathers	−.411*	.323*#		−.465*	.258*#		−.435*	.162*#	
Adopted vs. married									
Mothers	−.300*	−.212*#		−.344*	−.261*#		−.190*	−.121#	
Fathers	−.193*	−.106#		−.255*	−.172*#		−.198*	−.129#	
Partnership premium									
Divorced vs. married	Δ			Δ	Δ		Δ	Δ	
Mothers	−.152*	−.082*#		−.186*	−.120*#		−.188*	−.134*#	
Fathers	−.679*	−.150*#		−.733*	−.213*#		−.695*	−.263*#	
Widowed vs. married	Δ	Δ		Δ	Δ		Δ	Δ	
Mothers	.056	−.045		−.078	−.068		−.060	−.051	
Fathers	−.319*	−.262*		−.362*	−.288*		−.404*	−.342*	
Biology advantage vs. partnership premium									
Step vs. divorced	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
Mothers	−1.017*	−.045	−.146*	−1.168*	−.177*	−.246*	−.893*	−.093*	−.164*
Fathers	.267*	.473*	.453*	.264*	.473*	.452*	.262*	.429*	.402*

Note: Based on Table 4. For control variables, see Table 4.
[a]Including cohabitation.
*$p < .05$. Δ Significant gender interaction ($p < .05$). # Significant mediation by coresidence ($p < .05$) (two-tailed tests).

which they are actually quite weak. The interactions with the gender of the parent and divorce are negative and significant for all three outcomes. In other words, the divorce effect is stronger for fathers than for mothers. When we look at the effects for fathers, we observe divorce effects ranging from –.58 to –.78; these are strong effects.

When adding coresidence and duration variables to the model, we see only small changes in the divorce effect for mothers (Model 1 versus 2). This is expected given that mothers more often have custody after divorce, at least in the cohorts we studied. The effects for fathers are reduced significantly, however. The reduction is 51 percent of the effect on closeness, 37 percent of the effect on contact, and 36 percent of the effect on support. Reduced opportunities to invest in the child are therefore an important reason why the long-term effect of divorce is so much stronger for fathers. Nevertheless, even when duration is taken into account, divorced fathers' ties with their adult children are weaker than the ties between married fathers and their children. The effects are larger for contact than for closeness. Whereas we concluded that the advantage of biology applies more to mothers than to fathers, we now arrive at the reverse conclusion for the partnership premium.

To examine the role of selection, we compare Models 2 and 3. The divorce effect for mothers does not change when comparing the random- and fixed-effects models, whereas for fathers the effects of divorce become somewhat larger. This is not consistent with the idea of negative selection into the divorced state.

Certain aspects of the partnership hypothesis can also be tested by looking at widowed (biological) parents. The tables reveal small negative effects of widowhood for mothers on contact and support but no effects on closeness. For both outcomes, and in both datasets, we do find significant interactions of widowhood and the gender of the parent. The effects of widowhood are stronger for fathers, and clearly negative and significant. In other words, widowed fathers have weaker ties to their children than do married fathers, in line with notions about kinkeeping. When including duration effects in Model 2, these results do not change; this makes sense given that widowed parents do not generally experience interrupted parenting. Because the divorce effects for fathers do decline from Model 1 to Model 2, whereas the widowhood effects do not, the divorce and widowhood effects in fact become more similar in magnitude in Model 2. The fixed-effects models do not suggest that negative selection plays a role.

What do the child data tell us about the partnership hypothesis? We see strong negative divorce effects for fathers in Model 1 and a substantial reduction in these effects when controlling for coresidence and duration (Model 2). The reduction is again substantial and significant: 78 percent of the effect on closeness, 71 percent of the effect on contact, and 62 percent of the effect on support. Note that the child data allow for a more complete measure of duration, which may explain why mediation is stronger than in the parent data. The effects in Model 2 remain negative, although smaller than they were in the parent data. The divorce effects for mothers are weaker and decline less when controlling for coresidence and duration.

The pattern of effects for widowhood in the child data is similar to that in the parent data. Children and widowed fathers have weaker ties than do children and married fathers, but this difference is not observed for mothers. Although the point estimates are not exactly the same in the two datasets, the findings on divorce and widowhood in the child data also confirm the notion that the partnership premium is stronger for fathers than for mothers.

Biology versus Partnership

In the adult-child data, it is logically impossible to compare married and divorced biological parents within a child. It is possible, however, to compare divorced parents and stepparents within a child, which allows us to

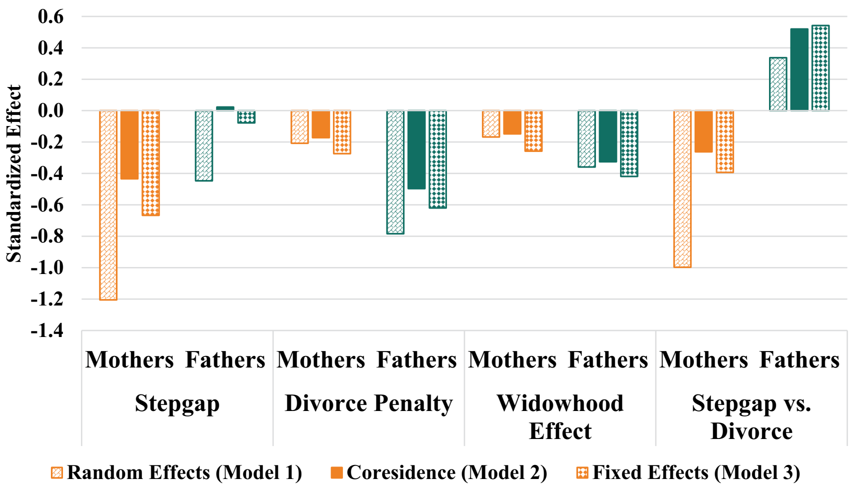

Figure 1. Implied Effects of Dyad Types on Intergenerational Contact for Fathers and Mothers in the Parent Data

evaluate the relative importance of biology and partnership. This comparison controls for unobserved traits of children that may affect ties to parents. For example, children are often emotionally affected by a divorce, which may make it more difficult to develop a relationship with the stepparent. Such effects are implicitly controlled for in the fixed-effects design. These comparisons are made at the bottom of Table 6. To be complete, we make the same comparison for the parent data at the bottom of Table 5.

Both types of fixed-effects models show that relationships with divorced fathers are weaker than relationships with stepfathers. We see this difference when comparing the divorced father and the stepfather of the same child (Table 6), but also when comparing the stepchild and the child from a previous marriage of the same father (Table 5). We also control for differences in the length of coresidence. For mothers, the pattern is more or less reversed. Ties between children and stepmothers are weaker than ties between children and divorced mothers, adjusted for differences in the occurrence and duration of coresidence. This difference is again observed in both comparisons: between a stepchild and the child from a previous marriage of the same mother, and between the divorced mother and the stepmother of the same child. These findings support our previous conclusion with a fixed-effects design. For mothers, the advantage of biology is greater than the partnership premium; for fathers, the partnership premium is greater than the advantage of biology. These conclusions are now based on fixed-effects estimates for the parent data *and* the child data.

We close our discussion by presenting Figure 1. This figure is based on only one outcome (contact) and one dataset (parents) but aptly illustrates the main thrust of our findings. The figure shows how each contrast changes across models, separately for fathers and mothers. The left-hand bar represents the initial estimate, the middle bar represents the estimate controlled for coresidence and duration, and the right-hand bar represents the within-parent comparison. We clearly see that stepgaps and divorce penalties are partly explained by coresidence but never by selection bias. Mediation of the divorce effect is stronger for fathers, and mediation of the stepgap is stronger for mothers. The remaining stepgap is larger for mothers than for fathers, and the remaining divorce penalty is larger for fathers than for mothers. The widowhood effect resembles the divorce effect and is also gendered, albeit more weakly.

Control Variables

We end with a brief discussion of the effects of the control variables (Tables 3 and 4). First, we see negative effects of the number of children/siblings, as there appears to be less contact and less support at the dyad level in larger families. Children of more highly educated parents have less frequent contact with their parents than do children of less educated parents, but there are positive effects of parental education on closeness and support. Daughters have stronger relationships with their parents than do sons. The effects of age are small. We do see a significant decline in support as children become older. Most of these effects are consistent across the two datasets, and consistent with previous studies on adult intergenerational relationships (Swartz 2009).

Finally, we explored the role of interparental conflict. This was measured with a scale consisting of three items, all referring to the period of marriage (when intact) or the period before the divorce (when divorced). We do not have this information for parents and their new partners. The three items (listed in the online supplement) were standardized and combined into a scale. We estimated the effects of divorce for biological parents using random-effects models on the child data with and without controlling for conflict. Our results, presented in the online supplement, show that adding conflict does reduce part of the main effects of divorce (for mothers) and by implication, also part of the divorce effects for fathers. However, the divorce and gender *interactions* remain significant and do not change for any of the three outcomes when adding conflict. This shows that conflict indeed has something to do with the partnership premium. We should keep in mind that there is a reciprocal relationship between the decision to separate and conflicts between partners, so it is unclear whether parental conflict is a mediating or confounding variable. Nonetheless, our central conclusion that fathers benefit more than mothers from partnership remains valid even when controlling for conflict.

CONCLUSIONS AND DISCUSSION

Although it was not our first hypothesis, we start our conclusion with the findings on coresidence and duration. Our analyses provide strong support for the long-term impact of variations in household structure during youth on parent-child relationships. Children who shared a household with a parent, and who lived longer in a household with a parent, have stronger ties with that parent when they are adults. The effects are similar for fathers and mothers, for contact and closeness, and do not depend on whether data come from parents or children. Effect sizes are quite strong and more or less linear, although there is clearly an added benefit of any coresidence. The notion that time is crucial may not be surprising, but it is an important conclusion based on a strong survey design and a large number of nonstandard families.

The hypothesis assuming an advantage of biology is not confirmed in our analysis, at least not as a general, gender-neutral principle. After controlling for the length of coresidence between parent and child, the entire step effect disappears for fathers. For stepmothers, the results are different; the ties they have to their stepchildren are weaker, even when we take coresidence and duration into account. This shows that if there is an advantage of biology, it is highly gendered, in line with our hypothesis. For the case of adoption, we find partly similar results. Children have somewhat weaker ties to adoptive parents than to biological parents, and these gaps are not fully explained by the length of coresidence. We also see gender differences in the adoption effects, and although these point in the direction of our hypothesis, the differences are clearly smaller. We suspect this has to do with the fact that adoptive parents are "the only parents," whereas stepparents may or may not be supported by the biological parents.

The idea that there is a partnership premium receives more support. First, adult children have weaker ties to their divorced parents, suggesting that the bond of marriage or cohabitation has an important long-term benefit to the parent-child bond. The effects are much stronger for fathers than for mothers, however. In other words, the advantage of biology applies mostly to mothers, whereas the partnership premium applies mostly to fathers. In the gendered partnership premium hypothesis, we argued that the partnership premium is due to patterns of kinkeeping and conflicting loyalties among children. Evidence for the kinkeeping mechanism can be seen in the effects of widowhood. Here too we see an effect, especially for fathers: fathers who lost their partner when the child was young have weaker ties to their adult children than do married fathers. In other words, the loss of a kinkeeper plays an important role.

The effects of divorce are consistent with the literature, but our evidence is stronger in a number of respects. We show that a major part of the negative divorce effect observed in the literature is due to the fact that divorced fathers spend fewer years living with the child. Coresidence also explains part of the interaction between gender and divorce. After adjusting for this, effects remain but they are clearly weaker. Moreover, we show that the effects are observed in a sample of adult children and a sample of parents.

One of the novelties of our data and design is that we were able to compare different types of children within parents, and different types of parents within children. These models provide a stronger test for our hypotheses than previous studies were able to provide. First, they control for stable characteristics of parents because we compare different types of children of the same parent. Similarly, they control for stable characteristics of children, as we compare different parents of the same child (at least in the stepparent–divorced parent comparison). Second, they control for some of the conflicts and instability that occur in families. For example, when comparing stepchildren and current biological children of the same parent, this parent has experienced the same history of instability. Similarly, when a child is traumatized by divorce, this should affect ties to both the "old" father and the "new" father. Our model does not control for all relevant traits and circumstances, however. For example, when parents change during the life course, this could affect their relationships to the different types of children differently. Because we cannot capture these changes, we cannot make true causal claims, if that were even possible. Our design is a significant step forward nonetheless, as much of the criticism of causal interpretations of the divorce effect focuses on stable personal traits, and it is in that sense that our data and design are a contribution. Longitudinal data would obviously strengthen the evidence on divorce and stepfamily effects as well (Kim 2011), but one would need data on relationships during childhood and before divorce, all the way up to the time when children have reached adulthood (ages 25 to 45). Such long-term panel data with sufficient numbers of nonstandard families are rarely available.

Our general conclusion is that biology matters most for mothers, whereas the partnership premium matters most for fathers. The interpretations of these two findings are clearly linked, however. Gendered patterns of kinkeeping within marriage help biological fathers maintain ties to their adult children. When fathers divorce, they lose this support, resulting in weaker ties to their biological children. If fathers repartner, they gain a kinkeeper, but this facilitates ties to their stepchildren (i.e., the biological children of their new partner), not to their prior biological children. When mothers divorce, they remain a kinkeeper for their own children, but when they repartner they do not gain a kinkeeper who can facilitate ties to their stepchildren. The interaction of the gendered advantage of biology on the one hand, and a traditional pattern of kinkeeping work on the other hand, is what weakens children's ties to both divorced fathers and stepmothers. This is in line with prior work that suggests family complexity comes with a "matrilineal tilt" (Clark and Kenney 2010).

We end with some caveats, limitations, and suggestions for further research. First, we have not linked the different parent-child relationships to each other at the family level. There are several interesting and important hypotheses about such links (e.g., King 2007), and these can also be tested with our data. Because this requires different types of models, we leave this to a further study. Second, we did not include all forms of complexity. Several interesting groups can be looked at, such as divorced stepparents, parents who were single all along, and stepparents whose partner died (e.g., Sun and Li 2014). We have data on all these groups but believe these are difficult to analyze with the more general theoretical and analytical framework we developed here. Third, we used coresidence and duration as measures for investment opportunities, and although their effects are quite strong, we realize that actual investments may vary independent of duration. Future work could look at the interaction of duration and parental involvement. Fourth, we were unable to fully address the role of parental conflict. We explored effects of conflicts between biological parents, but in the absence of detailed longitudinal data, we do not have a good way to separate conflict and divorce either empirically or conceptually. Finally, we have data from only one context. Although the Dutch case is representative of Western Europe, it is clear that this society and the cohorts we were looking at apply to the transition stage of the divorce revolution. The question of how *current* divorced parents and stepparents will develop relationships when their children are older is an interesting question to motivate future data collection.

Data and Funding

The survey was conducted as part of a larger project on Family Complexity funded by the European Research Council under the Horizon 2020 program [ERC grant agreement no. 669334]. The OKiN was developed, designed, and executed by a collaborative team of researchers from the University of Amsterdam (UvA) and Statistics Netherlands (CBS).

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Notes

1. Ouders en Kinderen in Nederland (Parents and Children in the Netherlands).
2. Analyses with matched register data show that response rates of divorced fathers are somewhat lower, and this could lead to an underestimate of the divorce effect in the parent data compared to the child data. As we will see, we find even stronger divorce effects in the parent data.
3. The data are available free of charge via the Data Archiving and Networked Services of the Netherlands (DANS/KNAW), and they are documented in an elaborate technical report (Kalmijn et al. 2017).
4. Upward support was relatively rare in our sample, as most parents are too young to be in need of the typical types of upward support (e.g., personal care, household maintenance). Therefore, we did not perceive it as a representative, general indicator for intergenerational solidarity in this sample.
5. For each episode in which the respondent did not live with the father/mother, we asked about the frequency of contact. We multiplied the length of the episode (in years) with the frequency of contact, and we coded the contact categories as follows: daily = 75 percent, weekly = 25 percent, monthly = 10 percent, and less often = 0 percent.
6. The cohabitation variable was constructed for all dyads, regardless of type. Hence, for divorced dyads, we know whether the dissolved union was a married or cohabiting union.
7. Based on a scale of three items measuring parental conflict during marriage (for children of intact unions) or before the divorce (for children of divorced or separated parents).

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